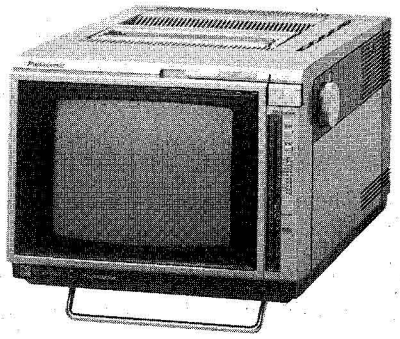
ORDER NO. KME8302012

Service Manual

Color Television Monitor

CT-7711A

Chassis No. NMX-K82C



Retain on file with CT-7711 Service Manual.

Model CT-7711A is the same as model CT-7711 except specified herein.
For complete service information, refer to above Service Manual.
(ORDER NO. ITD8104-496K)

The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this service manual.

Specifications

Power Source:	120 volts, 60 Hz, AC 12 volts and 24 volts DC
Power Consumption:	AC – 36 watts average, 0.6 Ampere max. DC – 27 watts average 2.7 Ampere max.
Antenna Impedance:	UHF 300 ohm Balanced VHF 75 ohm Coaxial (300Ω ~ 75Ω adapter is enclosed.)
Receiving Channels	
Regular TV:	ch. 2 ~ ch. 13 (VHF) ch. 14 ~ ch. 83 (UHF)
CATV:	ch. 2 ~ ch. 13, 5A (VHF) A-2, A-1, A ~ I (MID BAND)
Intermediate Frequency:	Video I-F carrier 45.75 MHz Sound I-F carrier 41.25 MHz Color Sub-carrier 42.17 MHz
Semiconductors:	31 transistors 72 diodes
Integrated Circuits:	8
Anode Voltage:	16.5 kV ± 1.5 kV (Zero Beam Current)
Sound Output:	0.7 watt (10% Distortion)
Speaker:	3 inches Round Type, Dynamic Voice coil 16 ohm
ColorPilot:	One button adjustment for Color, Tint, Brightness and Contrast.
Automatic Circuits:	Automatic Fine Tuning Peak Value AGC Automatic Voltage Regulator Automatic Beam Limiter Automatic Frequency and Phase Control Automatic Horizontal Frequency Control Automatic Noise Canceller Automatic Color Control
Picture Tube:	200RB22 23 squre inches 7 inches measured diagonal 70° deflection Quintrix II In-Line
Dimensions:	Height: 7-3/8 inches (186.0 mm) Width: 9-3/4 inches (247.5 mm) Depth: 12-1/8 inches (308.5 mm)
Weight:	12-1/2 lbs. (5.8 kg)

Weight and dimensions shown are approximate.

Panasonic®

Matsushita Engineering and Service Company
50 Meadowland Parkway,
Secaucus, New Jersey 07094

Panasonic Hawaii Inc.
91-238 Kauhi St. Ewa Beach
P.O. Box 774
Honolulu, Hawaii 96808-0774

Panasonic Sales Company, Division of Matsushita Electric of Puerto Rico, Inc.
Ave, 65 De Infanteria, KM 9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

CONTENTS

SAFETY PRECAUTIONS. 2
TV INDICATOR ADJUSTMENT 4
GENERAL ALIGNMENT. 5
CIRCUIT EXPLANATION 9
CONDUCTOR VIEWS 9
SCHEMATIC DIAGRAM 14
EXPLODED VIEWS 16
REPLACEMENT PARTS LIST 17

THIS MODEL COMPLIES WITH DHHS RULES 21 CFR SUBCHAPTER J APPLICABLE AT DATE OF MANUFACTURE.

IMPORTANT SAFETY NOTICE

There are special components used in Panasonic TV sets which are important for safety. These parts are shaded on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of Matsushita Electric.

ABBREVIATIONS USED IN THIS MANUAL

ABL	Automatic Beam Limiter
ACC	Automatic Color Control
AGC	Automatic Gain Control
AFT	Automatic Fine Tuning
APF	Active Power Filter
APC	Automatic Phase Control
AVR	Automatic Voltage Regulator
CRT	Cathode Ray Tube
DY	Deflection Yoke
FBT	Flyback Transformer
OTL	Transformerless Output
SEPP	Single-Ended Push-Pull Circuit
HAFC	Horizontal Automatic Frequency Control
ADDP	Automatic Deep Discharge Protection

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. It is advisable to insert an isolation transformer in the power line and AC supply before servicing a hot chassis.
2. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations are properly installed.
4. Before turning the receiver on, measure the resistance between B+ line and chassis ground. Connect ⊖ side of an ohmmeter to the B+ lines, and ⊕ side to chassis ground. Each line should have more resistance than specified, as follows.

B+ Line	Minimum Resistance
114V	60kΩ
12V	550Ω

5. When the TV set is not to be used for a long period of time, unplug the power cord from the AC outlet.
6. Potentials, as high as 18.0kV are present when this receiver is in operation. Operation of the receiver with out the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high-voltage equipment. Always discharge the anode of the picture tube to the receiver chassis before handling the tube.
7. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Turn on the receiver's power switch.
3. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screwheads, antennas, control shafts, handle bracket, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 240kΩ and 5.2MΩ.
   When the exposed metal does not have a return path to the chassis, the reading must be ∞.

LEAKAGE CURRENT HOT CHECK (See figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15μF capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

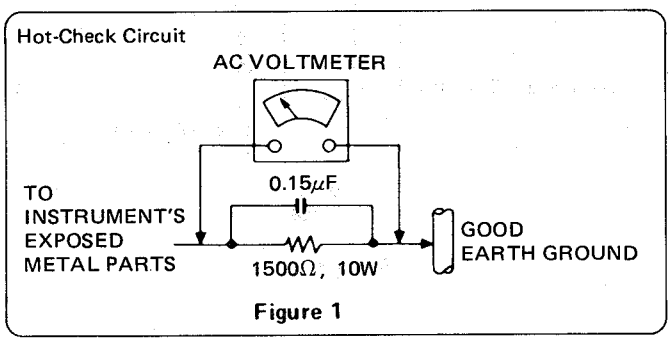


Figure 1

X-RADIATION

WARNING: 1. The potential source of X-Radiation in TV sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, make sure that the jig is capable of handling 18.0 kV without causing X-Radiation.

NOTE: It is important to use an accurate, periodically calibrated high voltage meter.

1. Turn Bright and Panabrite controls to minimum brightness.
2. Set ColorPilot switch to OFF position and Service switch to SERVICE position.
3. Measure the High Voltage. The upper meter (electrostatic type) reading should indicate 16.5 kV ± 1.5 kV.
   If the upper meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
4. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.
5. To prevent exposure to X-Radiation, the picture tube shield must be kept in place with power applied to the set.

HORIZONTAL OSC. DISABLE CIRCUIT TEST

SERVICE WARNING: This test must be made as a final check before set is returned to customer.

1. With rear cover removed, supply nominal 120V AC to set and turn on power switch.
2. Adjust customer controls to normal position.
3. Short pin ① to pin ② of IC801 with a jumper wire. Confirm that the picture tube screen blacks out (horizontal oscillation stops).
4. If this does not occur, Horizontal OSC. Disable Circuit is not operating.
   Follow the Horizontal Oscillator Disable Circuit Repair Procedures before the set is returned to customer.

HORIZONTAL OSC. DISABLE CIRCUIT REPAIR PROCEDURE

1) Connect a DC voltmeter between the cathode of D505 and chassis ground of the main circuit board. If nearly 11.0V is not present on the cathode, find the cause. Check R523, D503 and D505.
2) If nearly 11.0V is present on the cathode, check IC401, R518, C515 and D504.
3) Carefully check above specified parts, and related circuits and parts. When the circuit is repaired, try the horizontal oscillator disable circuit test again.

TV INDICATOR ADJUSTMENT

Alignment

1. Set ColorPilot switch (SW651) to OFF position.
2. Set tracking adjust controls (R005, R006, R007, R008, R009, R010) to center position.
3. Turn the tuning knob counterclockwise until the channel indicator comes at the lowest end.
   Then turn the tuning knob 2 more turns.
4. Fix the channel indicator to the thread with paint lock.

Adjustment Procedure

1. Set band select switch to UHF position.
2. Set channel indicator to ch 69 by turning the tuning knob.
3. Adjust R006 to obtain the best picture at ch 69.
4. Set channel indicator to ch 14 by turning the tuning knob.
5. Adjust R010 to obtain the best picture at ch 14.
6. If the best picture is not obtained by deviation of within ± 2 ch from its correct indicator point, repeat step 2 to step 5.

Note: If the channels 14 and 69 can not be tuned, set the channel indicator at a high channel or low channel as necessary to adjust the channel indicator.

7. Set band select switch to VHF position.
8. Set channel indicator to ch 13.
9. Adjust R005 to obtain the best picture at ch 13.
10. Set channel indicator to ch A-2.
11. Adjust R009 to obtain the best picture at ch A-2.
12. Set channel indicator to ch 6.
13. Adjust R008 to obtain the best picture at ch 6.
14. Set channel indicator to ch 2.
15. Adjust R007 to obtain the best picture at ch 2.
16. If the best picture is not obtained by deviations of within ± 0.5 ch from its correct indicator point, repeat step 8 to step 15.

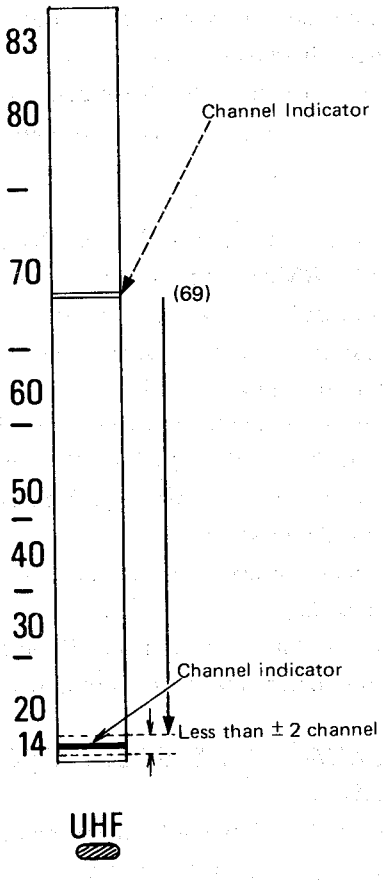


Figure 2

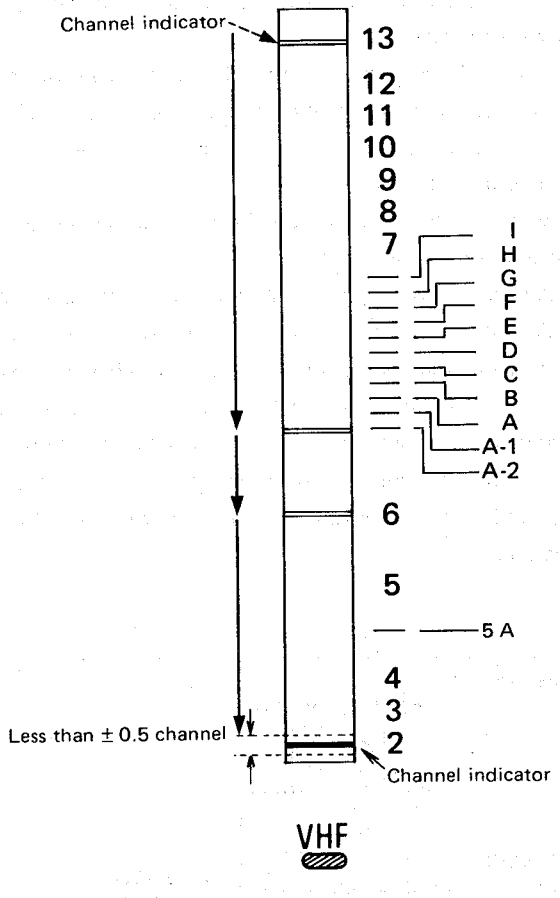


Figure 3

Note:

1) The following conditions are required.
   UHF: To obtain the best picture from ch 14 to ch 83, deviation of ± 2 ch from the correct tuning indication is acceptable.
   VHF: To obtain the best picture from ch 2 to ch 6 and ch A-2 to ch 13, deviation of ± 0.5 ch from the correct tuning indication is acceptable.
2) In the locations where CATV channels are not applicable, receive ch 7 instead of ch A-2 for adjustment. If the receiver, adjusted with ch 7, is to receive Mid-Band channels, the tracking must be readjusted with ch A-2 for the proper tracking of Mid-Band.

GENERAL ALIGNMENT

VIDEO I-F ALIGNMENT

Preparation

1. Set up sweep and marker generator, oscilloscope, and power supply as shown in figure 4.
2. Rotate "Channel Tuning" knob to set the channel indicator at VHF high position.
3. Set up AGC Bias control (5kΩ) as shown in figure 4.
4. Connect R-jumper (100Ω) in parallel with R112.
5. Connect short jumpers as shown in figure 4.

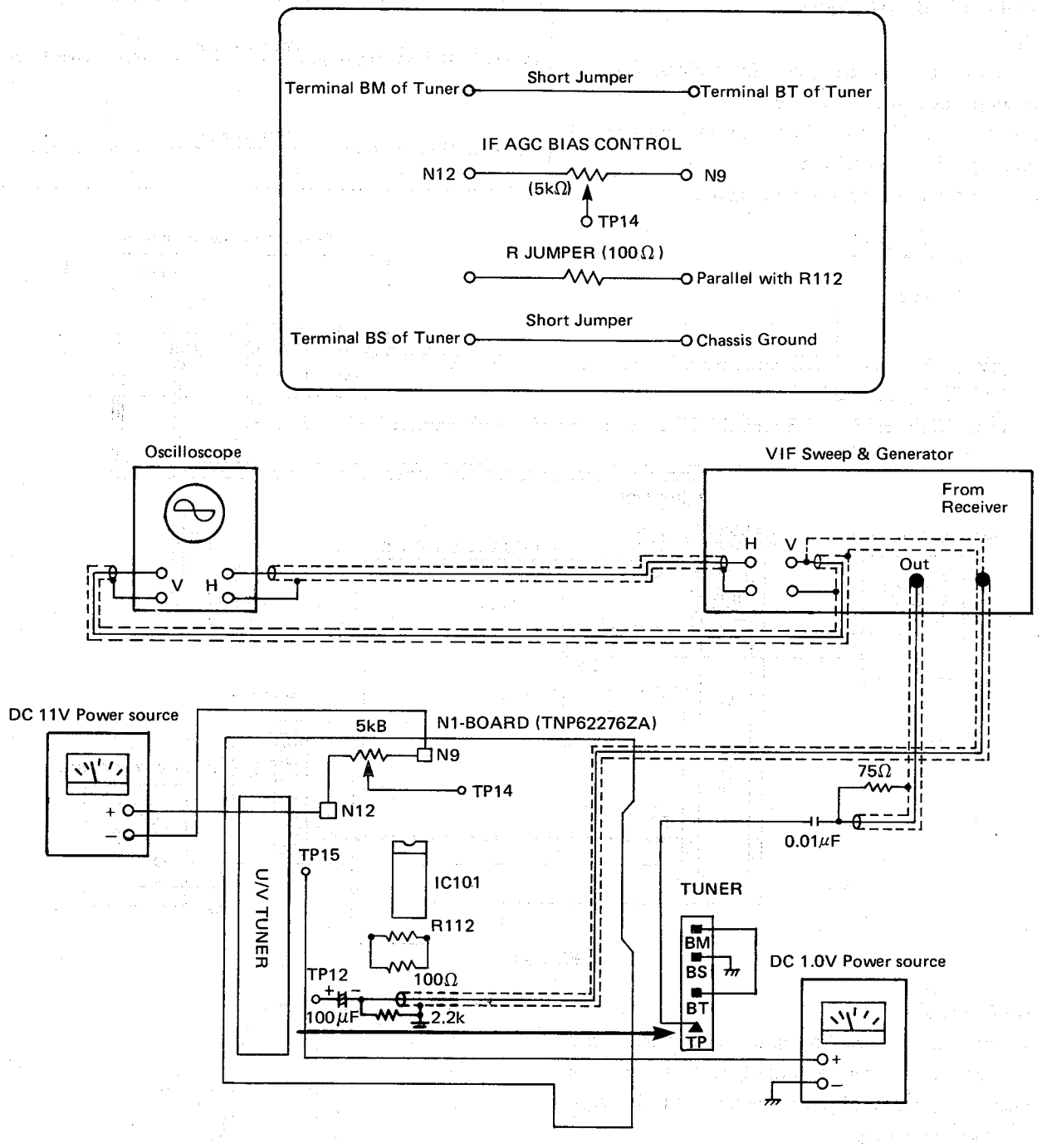


Figure 4

Alignment Procedure

1. Set the sweep generator output level to 100mVp-p.
2. Adjust the bias voltage at TP14 for maximum signal gain. Then decrease the bias voltage to decrease the detector output voltage at TP12 until it becomes 1.0Vp-p on oscilloscope.
3. Adjust tuner converter coil to achieve a waveform as that of figure 5 with maximum amplitude at 44 MHz.
4. Make sure that there is no spurious oscillation by varying sweep output by ± 15dB adjusting IF AGC bias control.

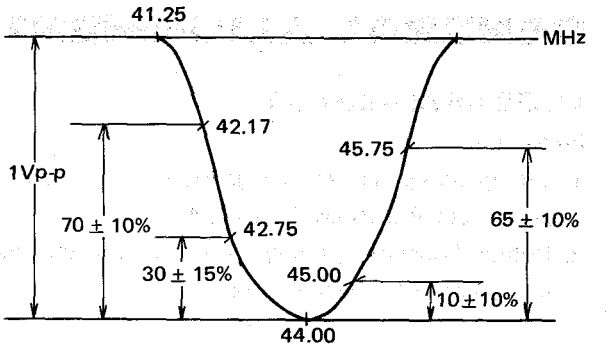
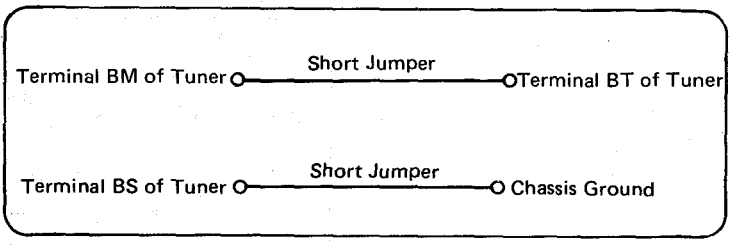


Figure 5

47.25 MHz TRAP ALIGNMENT

Preparation

1. Set up sweep and marker generator, oscilloscope, and power supply as shown in figure 6.
2. Rotate "Channel Tuning" knob to set the channel indicator at VHF high position.
3. Connect short jumpers as shown in figure 6.



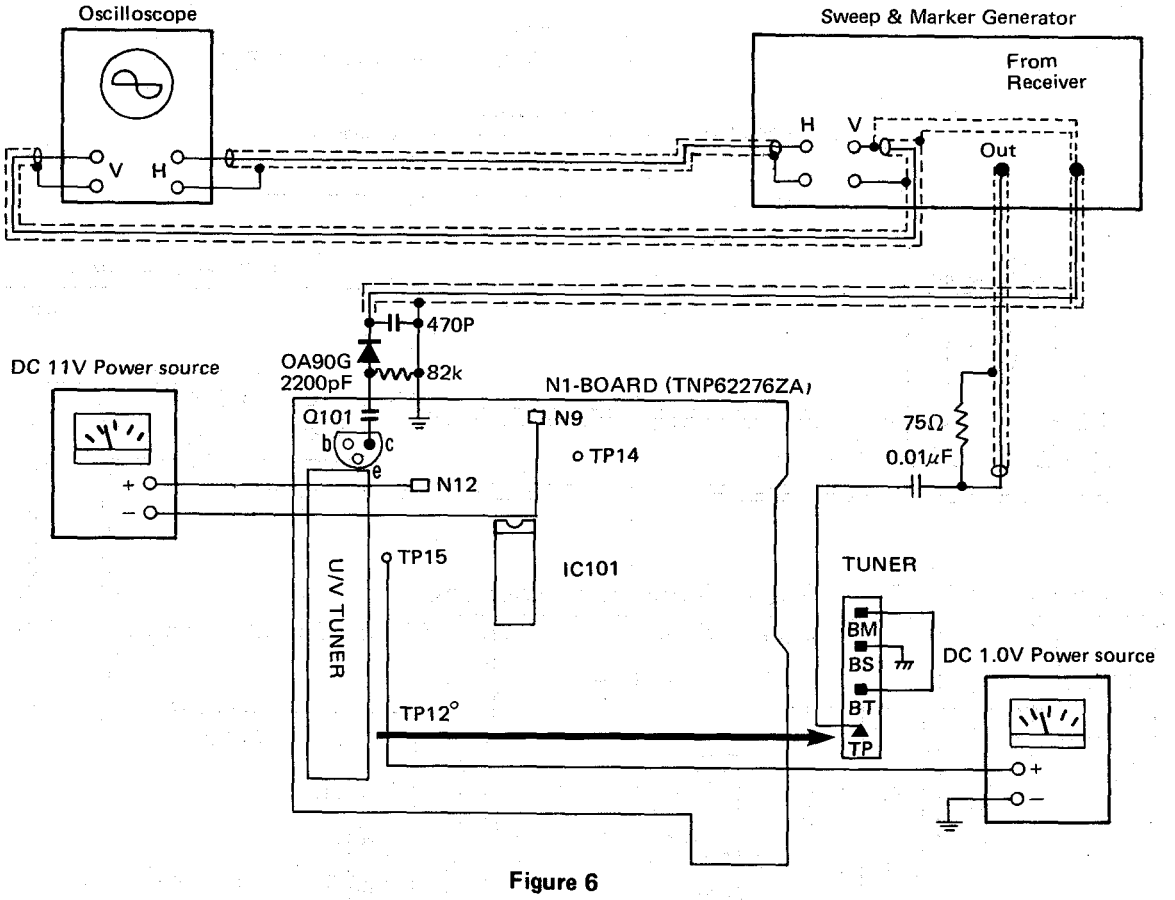


Figure 6

Alignment Procedure

1. Set the sweep output level to approximately 100 mVp-p.
2. Slightly adjust the sweep output level so that the maximum amplitude of the waveform on the oscilloscope becomes 1 Vp-p.
3. Adjust T103 for minimum wave amplitude at 47.25 MHz. (See figure 7.)

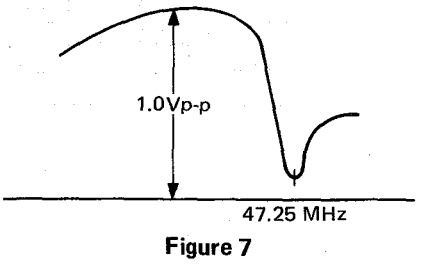


Figure 7

AUTOMATIC FINE TUNING (AFT) ALIGNMENT

Preparation

1. Set up 45.75 MHz signal generator, power supply and voltmeter as shown in figure 8.
2. Rotate "Channel Tuning" knob to set the channel indicator at VHF high position.
3. Set up AGC Bias control (5kΩ) as shown in figure 8 and adjust it to approximately 8.0V.
4. Connect short jumper as shown in figure 8.

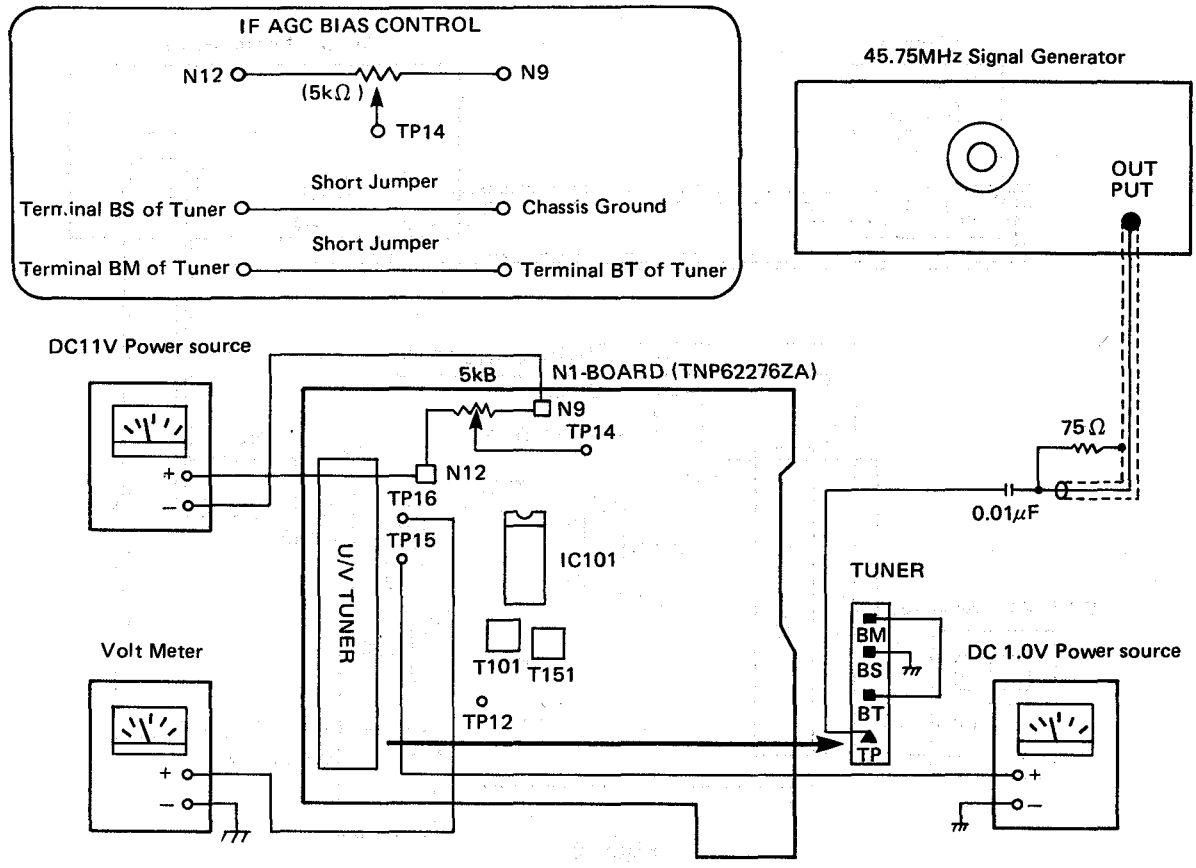


Figure 8

Alignment Procedure

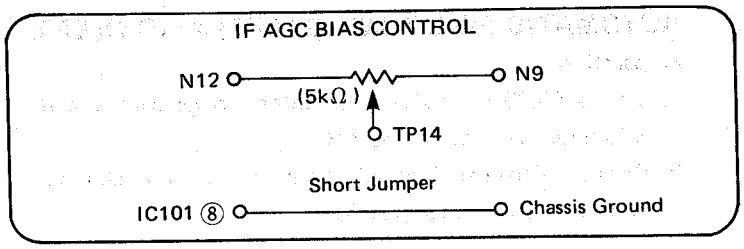
1. Set signal generator frequency at 45.75 MHz and output level to 100mVp-p.
2. Adjust T151 to obtain 6.5V ± 1.0V at TP16.
3. Vary signal generator frequency 100 kHz higher and lower (45.65 MHz – 45.85 MHz) and confirm that the voltage at TP16 varies more than 2V.

Note: This alignment is factory set and should require no adjustment. If adjustment should become necessary use an accurate frequency counter to monitor the RF generator frequency.

SOUND I-F ALIGNMENT

Preparation

1. Set up sweep and marker generator, power supply and oscilloscope as shown in figure 9.
2. Set up AGC Bias control (5kΩ) as shown in figure 9.
3. Connect a short jumper as shown in figure 9.



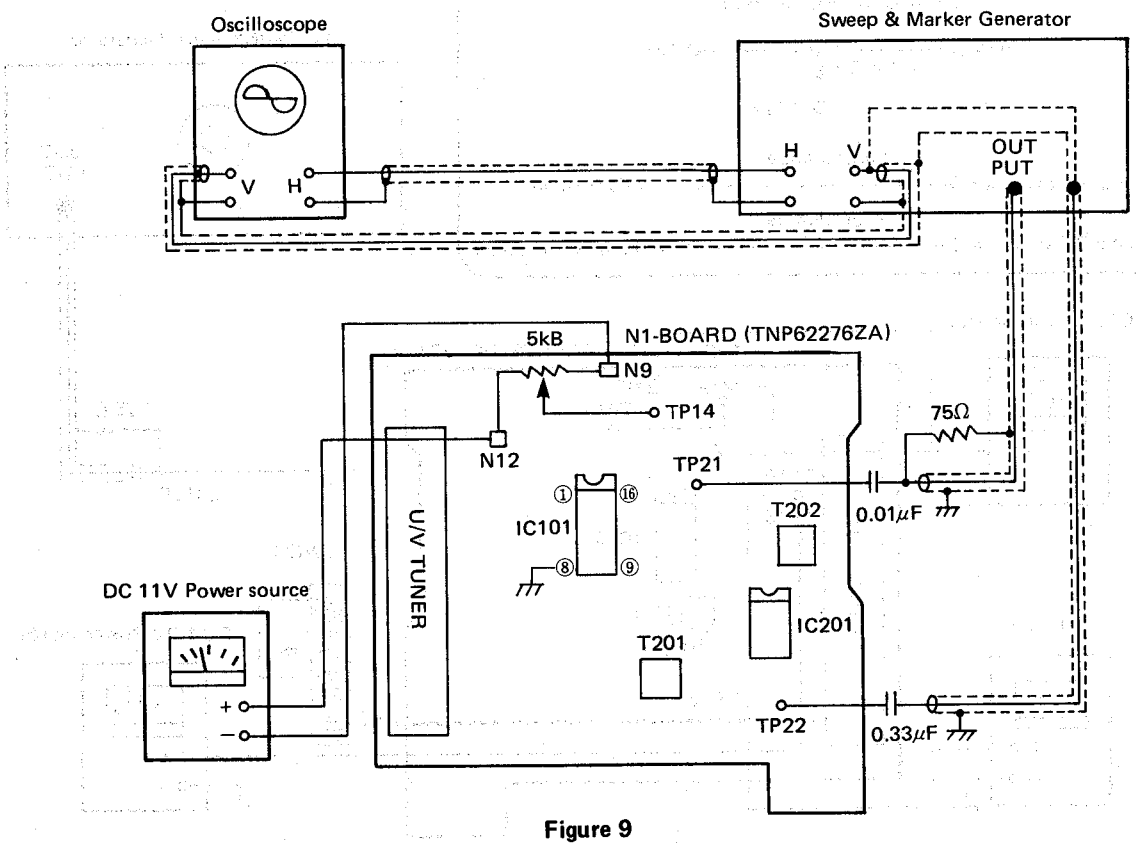


Figure 9

Alignment Procedure

1. Cut I-F circuit function off by setting attached AGC Bias control to minimum or set AGC Bias voltage supplied by D.C. power source to zero volts at TP14.
2. Set sweep generator output level to 6 mVr.m.s. and adjust T201 to obtain the maximum amplitude as shown in figure 10.
3. Adjust T202 to obtain the maximum amplitude at 4.5 MHz as shown in figure 10.
4. Adjust T201 again to achieve the waveform as shown in figure 11 (a = b).
5. Set sweep generator output level to 16 mVrms.
6. Confirm that the waveform line between +90 kHz and −90 kHz point is straight as shown in figure 11.
   (There should be no distortion in the range of ±100 kHz.)

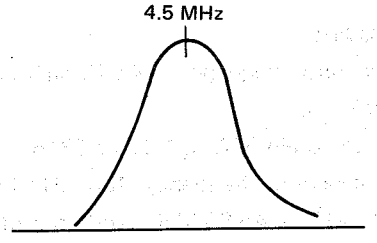


Figure 10

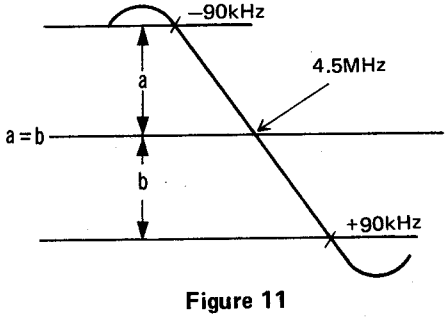


Figure 11

CIRCUIT EXPLANATION

HORIZONTAL OSC. DISABLE CIRCUIT

(See Figure 12.)

1. Under normal operating conditions, zener diode D505 is cut off due to its low cathode voltage.
2. When the pulse amplitude applied to diode D503 increases, it raises the cathode voltage of zener diode D505. As a result, D505 conducts.
3. The conduction of D505 increases pin 5 voltage of IC401.
   This causes the Horizontal Oscillator circuit to stop and the high voltage is reduced to zero.

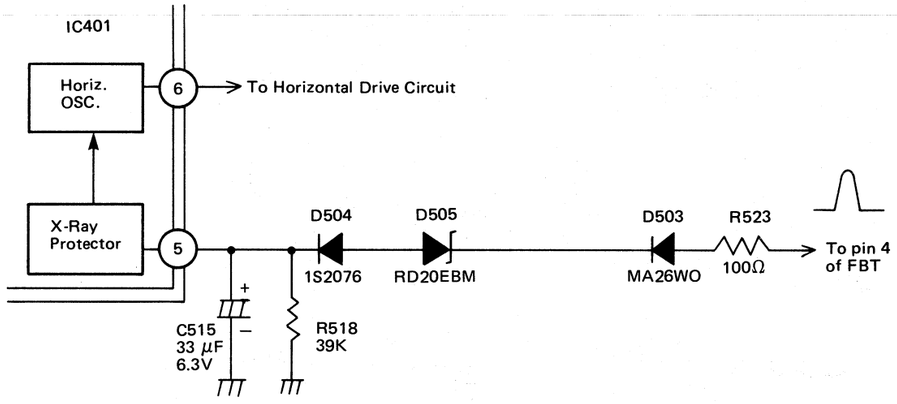
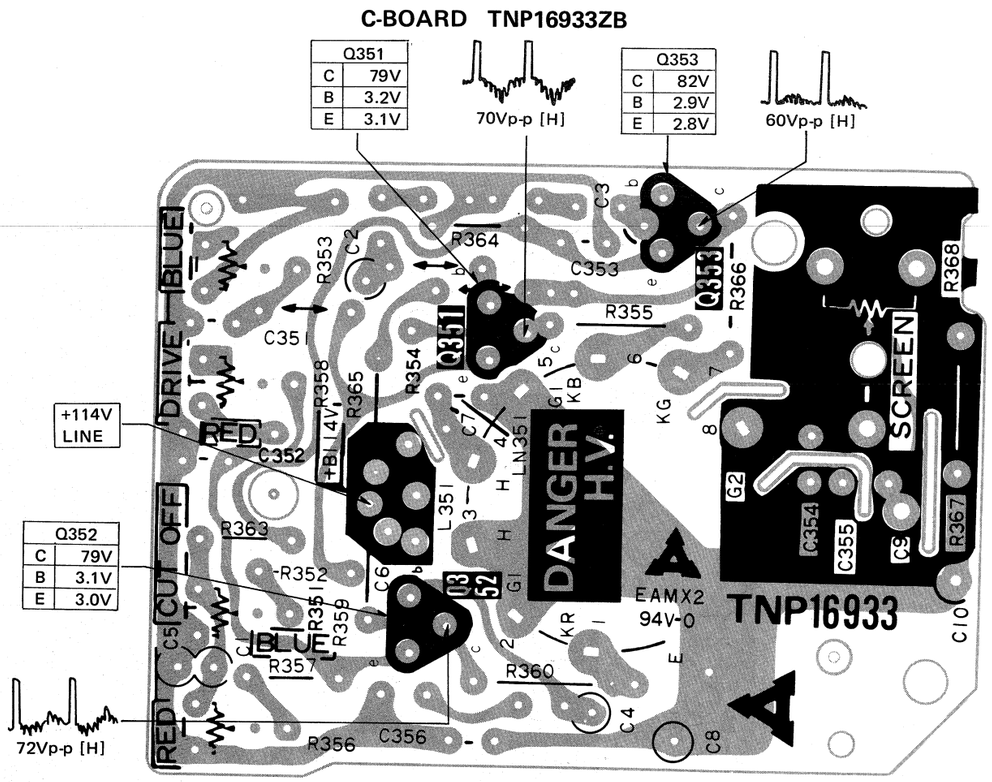


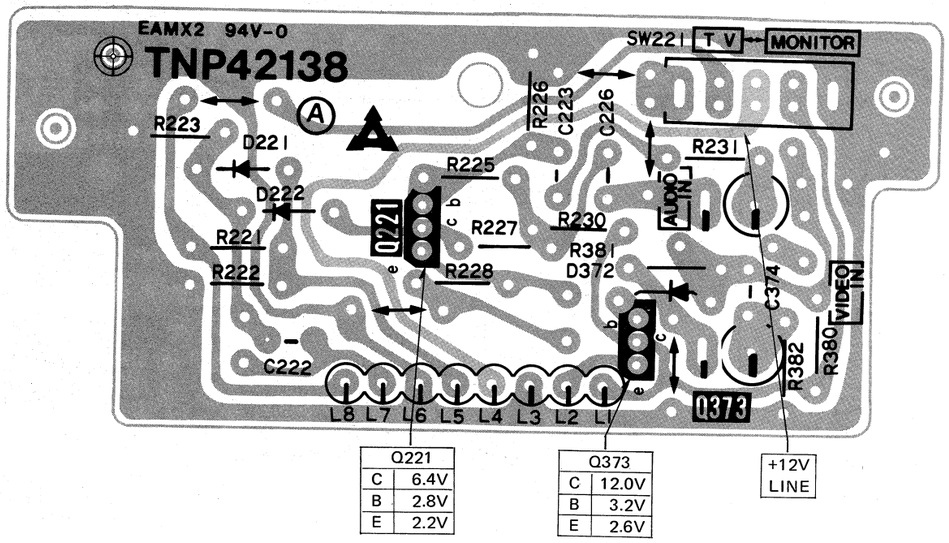
Figure 12

CONDUCTOR VIEWS

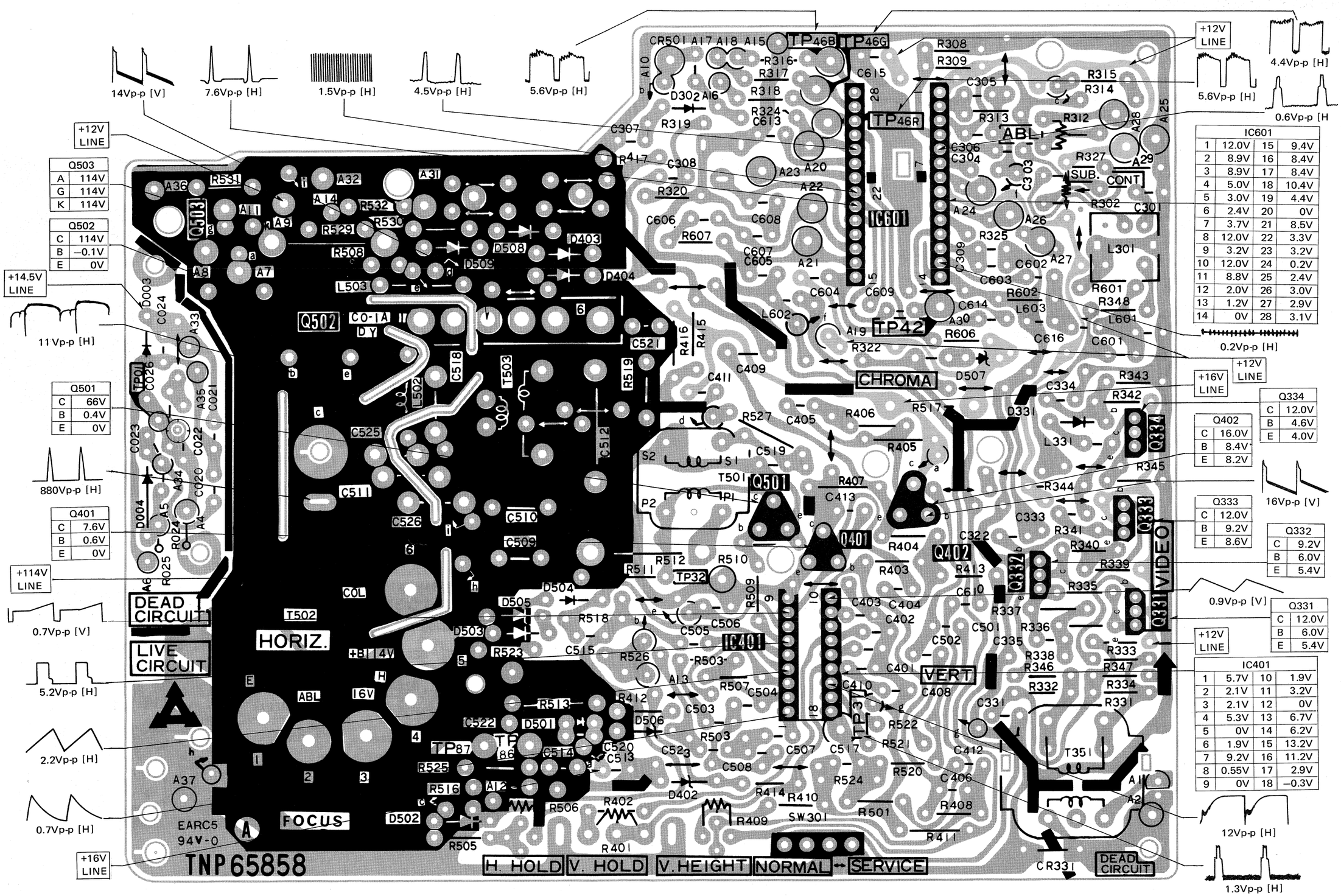
C-BOARD TNP16933ZB



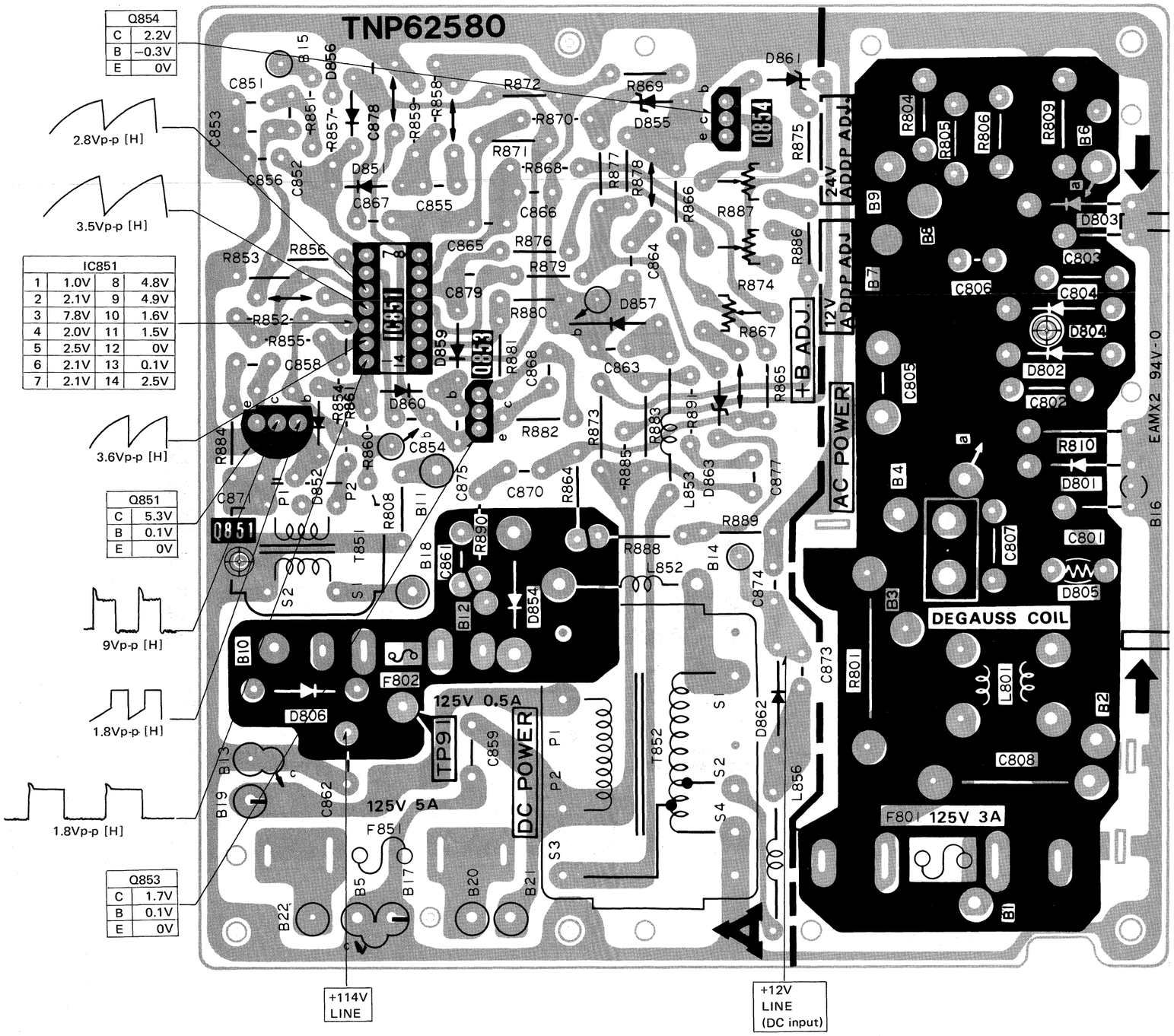
L-BOARD TNP42138ZA



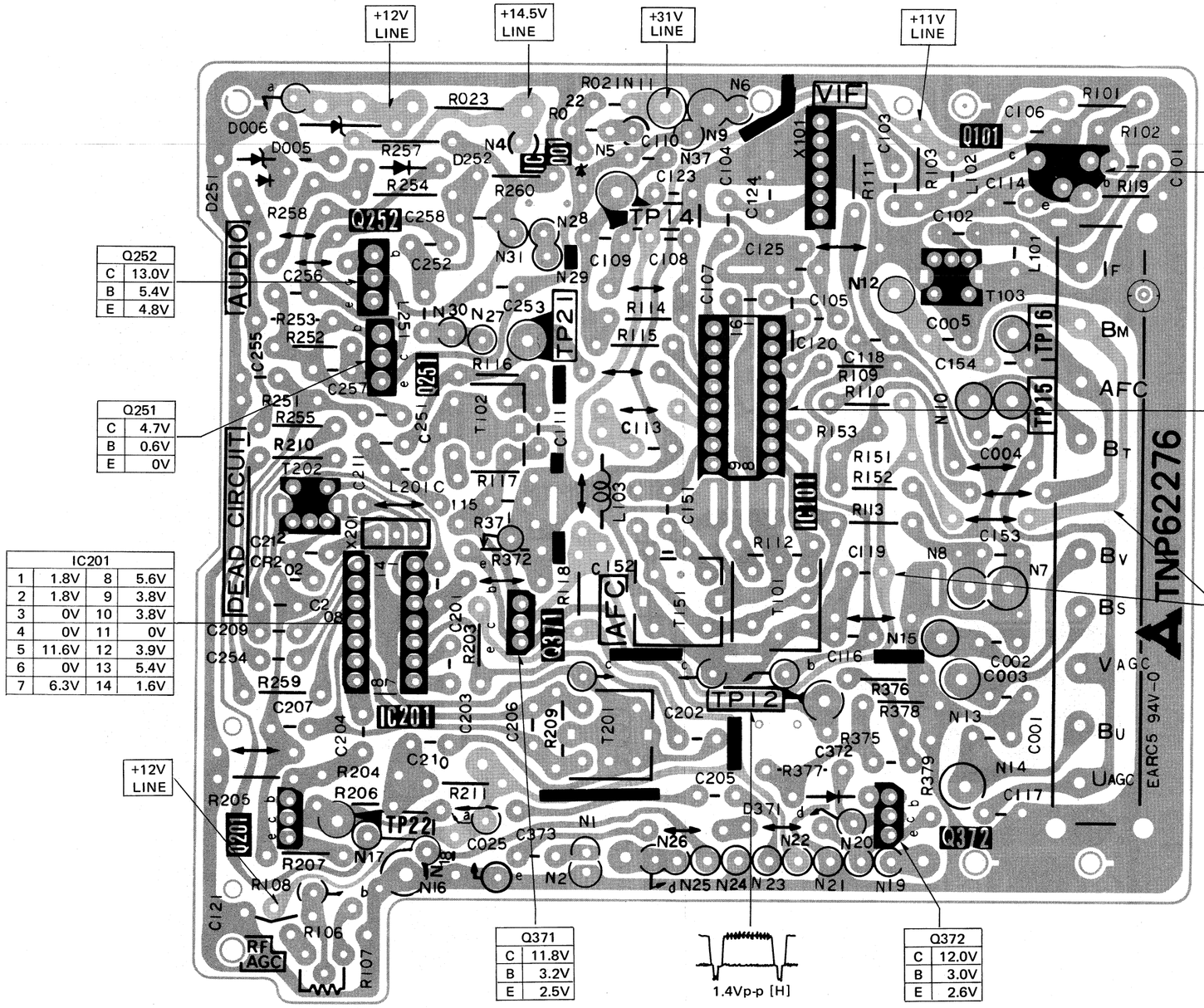
A-BOARD TNP65858ZA



B-BOARD TNP62580ZA



N1-BOARD TNP62276ZA



Q101	
C	11.8V
B	2.6V
E	1.9V

IC101			
1	4.6V	9	8.2V
2	4.6V	10	3.0V
3	5.7V	11	11.8V
4	9.2V	12	3.5V
5	6.0V	13	6.9V
6	6.4V	14	6.9V
7	3.0V	15	4.5V
8	8.2V	16	4.5V

Q252	
C	13.0V
B	5.4V
E	4.8V

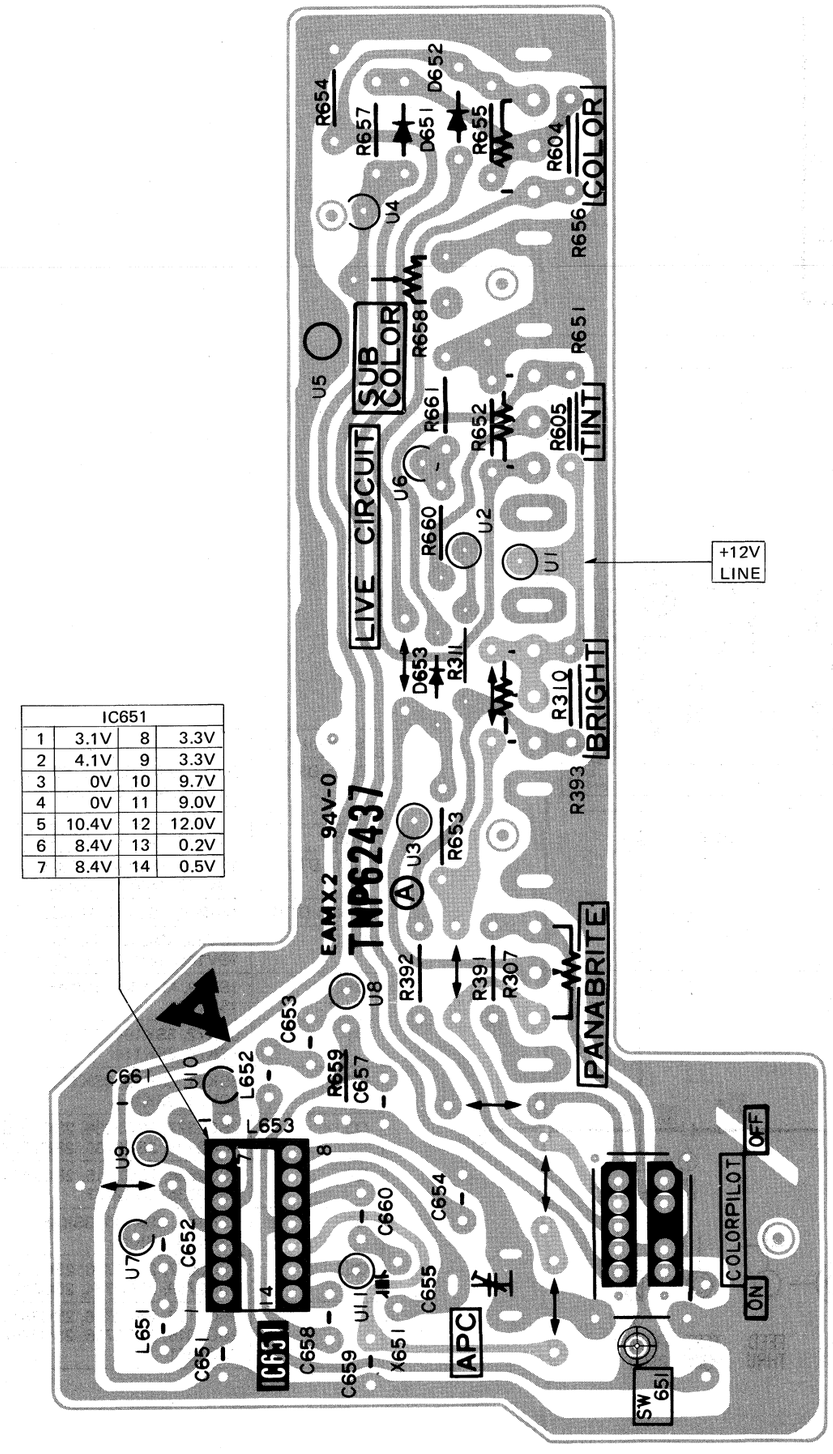
Q251	
C	4.7V
B	0.6V
E	0V

IC201			
1	1.8V	8	5.6V
2	1.8V	9	3.8V
3	0V	10	3.8V
4	0V	11	0V
5	11.6V	12	3.9V
6	0V	13	5.4V
7	6.3V	14	1.6V

Q371	
C	11.8V
B	3.2V
E	2.5V

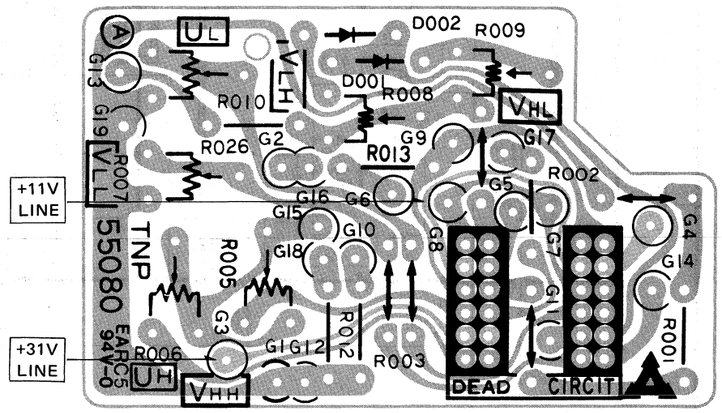
Q372	
C	12.0V
B	3.0V
E	2.6V

U-BOARD TNP62437ZB

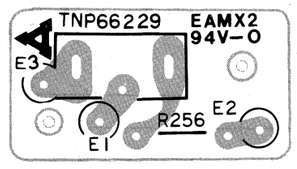


IC651			
1	3.1V	8	3.3V
2	4.1V	9	3.3V
3	0V	10	9.7V
4	0V	11	9.0V
5	10.4V	12	12.0V
6	8.4V	13	0.2V
7	8.4V	14	0.5V

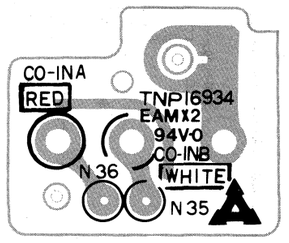
G-BOARD TNP55080ZA



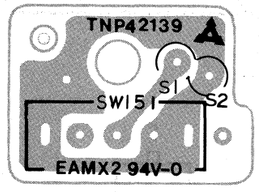
E-BOARD TNP66229ZA



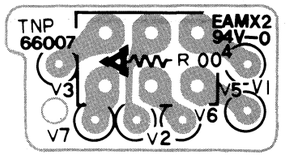
N2-BOARD TNP16934ZA



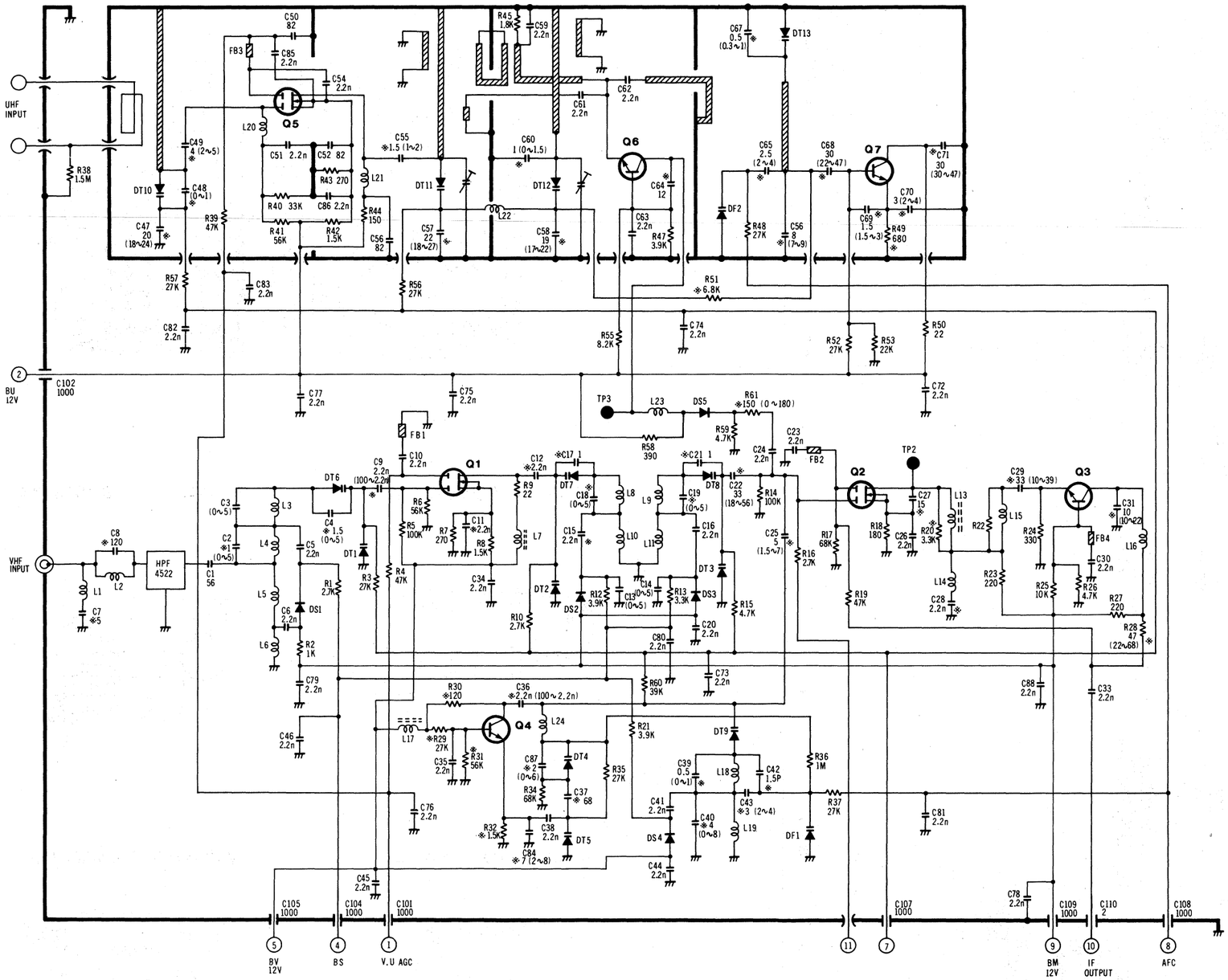
S-BOARD TNP42139ZA



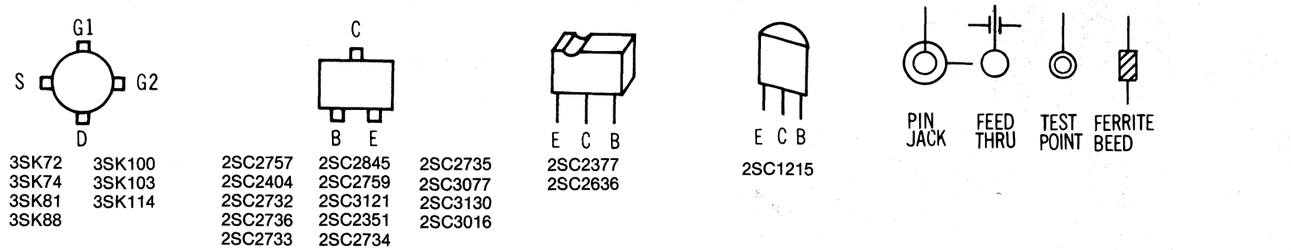
V-BOARD TNP66007AA



SCHEMATIC DIAGRAM U/V TUNER TNV76771F2



Symbol No.	Part No.
DS1~DS4	MA57, MA856, 1SS152, 1SS110, 1SS168, 1SS153, MA56
DS5	1SS119, MA161, 1SS113
DT1~DT9	1S2209, 1SV110, MA325, 1SV113, 1SV97, MA328
DT10~DT13	1S2208, 1SV111, MA325
DF1	1SV89, MA340, MA840, 1SV145, 1SV146, 1S2207
DF2	1SV89, MA840, 1SV145, 1SV146
Q1	3SK72, 3SK104, 3SK81, 3SK74, 3SK114
Q2	3SK81, 3SK72, 3SK114, 3SK74, 3SK104
Q3	2SC2377, 2SC2636, 2SC1215, 2SC2404, 2SC2735, 2SC2757
Q4	2SC2636, 2SC1215, 2SC2404, 2SC2735, 2SC2757
Q5	3SK103, 3SK100, 3SK88, 3SK118, 3SK87
Q6	2SC3077, 2SC2758, 2SC2732, 2SC2759, 2SC2734, 2SC3121
Q7	2SC3130, 2SC2736, 2SC2845, 2SC3016, 2SC2735, 2SC2757, 2SC2351



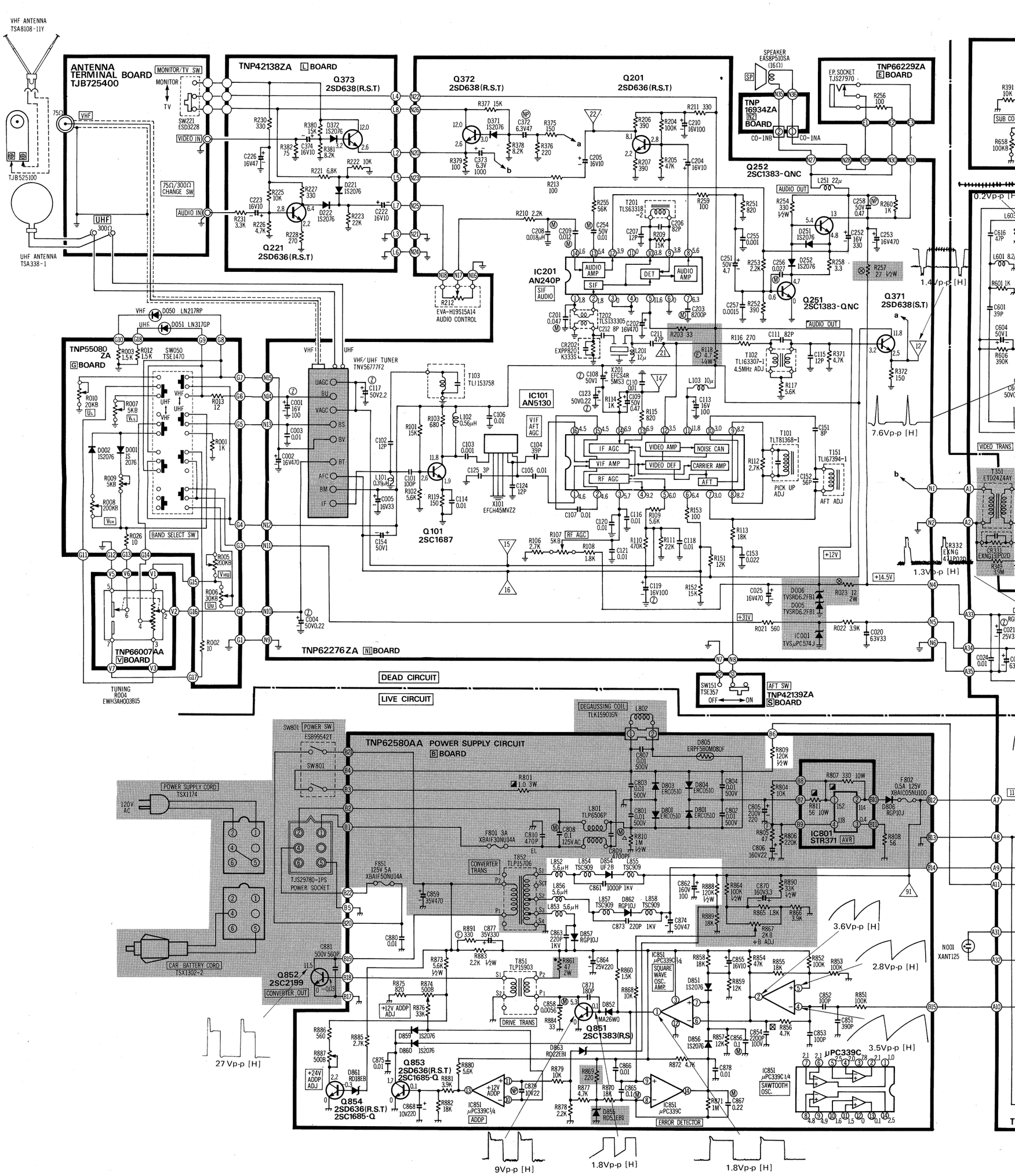
3SK72 3SK100
3SK74 3SK103
3SK81 3SK114
3SK88

2SC2757 2SC2845 2SC2735
2SC2404 2SC2759 2SC3077
2SC2732 2SC3121 2SC3130
2SC2736 2SC2351 2SC3016
2SC2733 2SC2734

2SC2377
2SC2636

2SC1215

SCHEMATIC DIAGRAM FOR MODEL CT-7711A



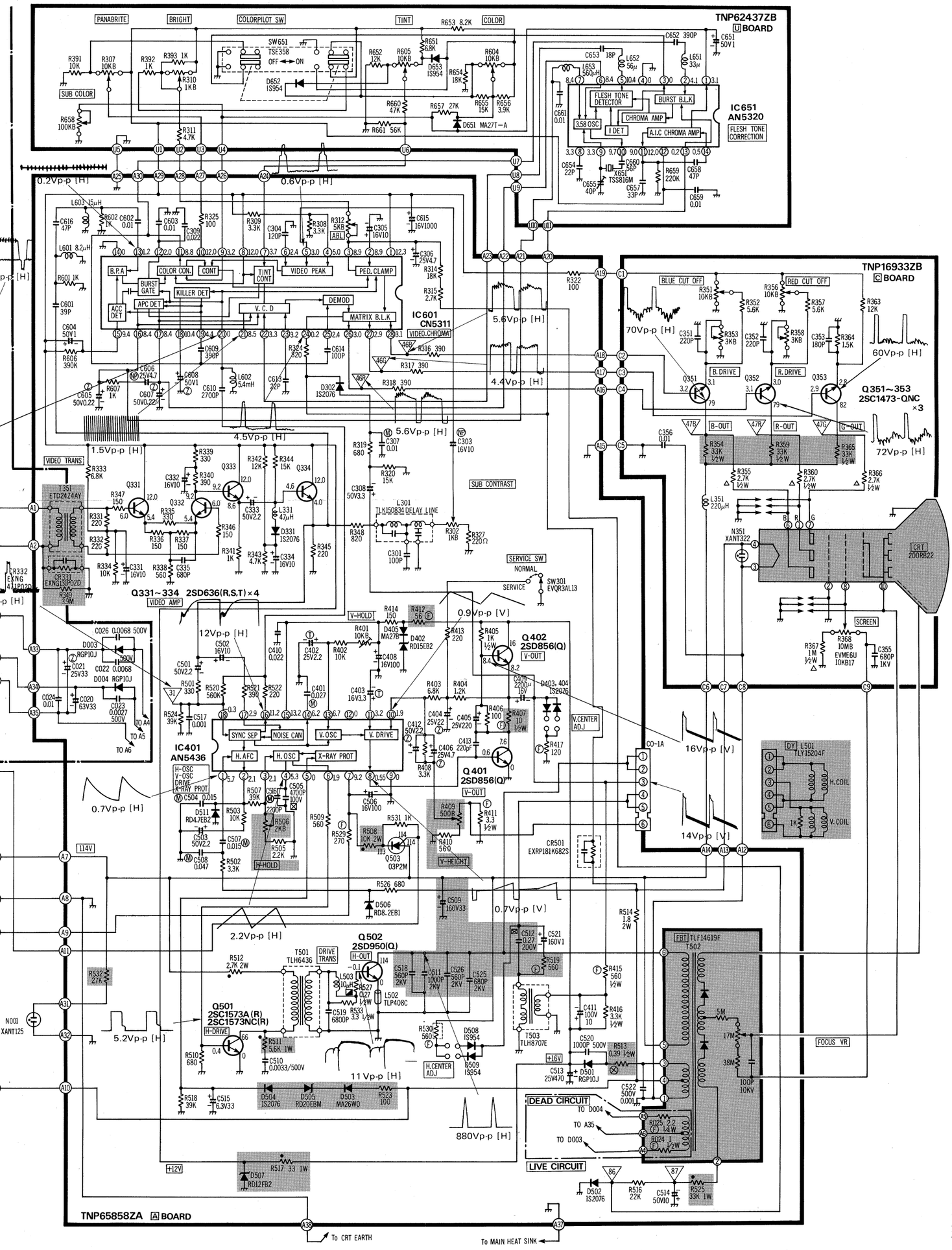
IMPORTANT SAFETY NOTICE

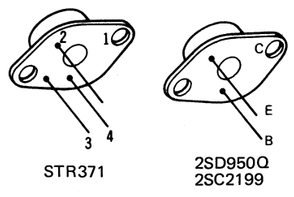
THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

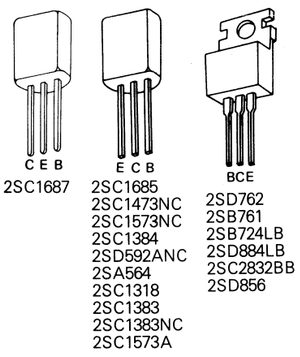
NOTE:

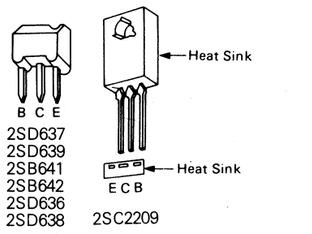
1. RESISTOR
   All resistors are carbon 1/8W resistor, unless otherwise noted the following marks.
   Unit of resistance is OHM (Ω), (K = 1,000, M = 1,000,000).
   - △ : Solid
   - □ : Wire Wound
   - Ⓕ : Non-flamble
   - ◪ : Cement
   - ⏦ : Thermistor
   - ⊗ : Fuse
   - ● : Metal Oxide
   - ⊙ : Metal Film
2. CAPACITOR
   All capacitors are ceramic 50V capacitor, unless otherwise noted the following marks.
   Unit of capacitance is μF, uniess otherwise noted.
   - ⊞ : Electrolytic
   - (NP) : Bipolar
   - (Z) : Z Type
   - (T) : Dipped Tantalum
   - (V) : Safety Vent.
   - (◎) : Titanium Oxide
   - ● : Temp Compensation
   - (M) : Polyester
   - (S) : Polystyrene
   - ⊠ : Polypropylene
3. COIL
   Unit of indicatance is μH.
4. TEST POINT
   - ▽ : Test point position
5. VOLTAGE MEASUREMENT
   Voltage is measured by a volt ohm mete
   when all controls are set to the maximu
6. When arrow mark (↗) is found, connec
7. When schematic diagram of a board is d
   dotted line. (— · —)
8. This schematic diagram is the latest at t

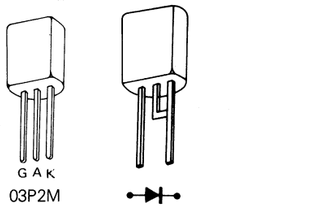
7711A (CHASSIS NO. NMX-K82C)

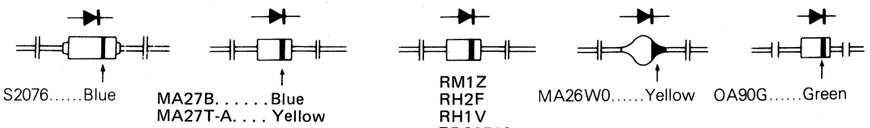


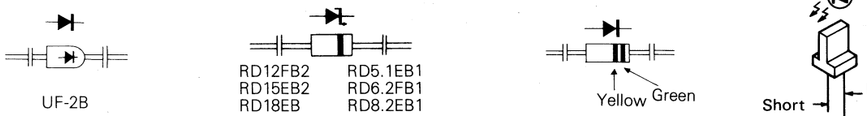


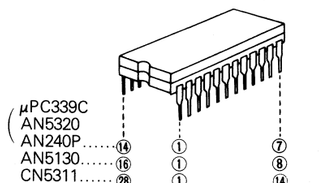












ce is μH.

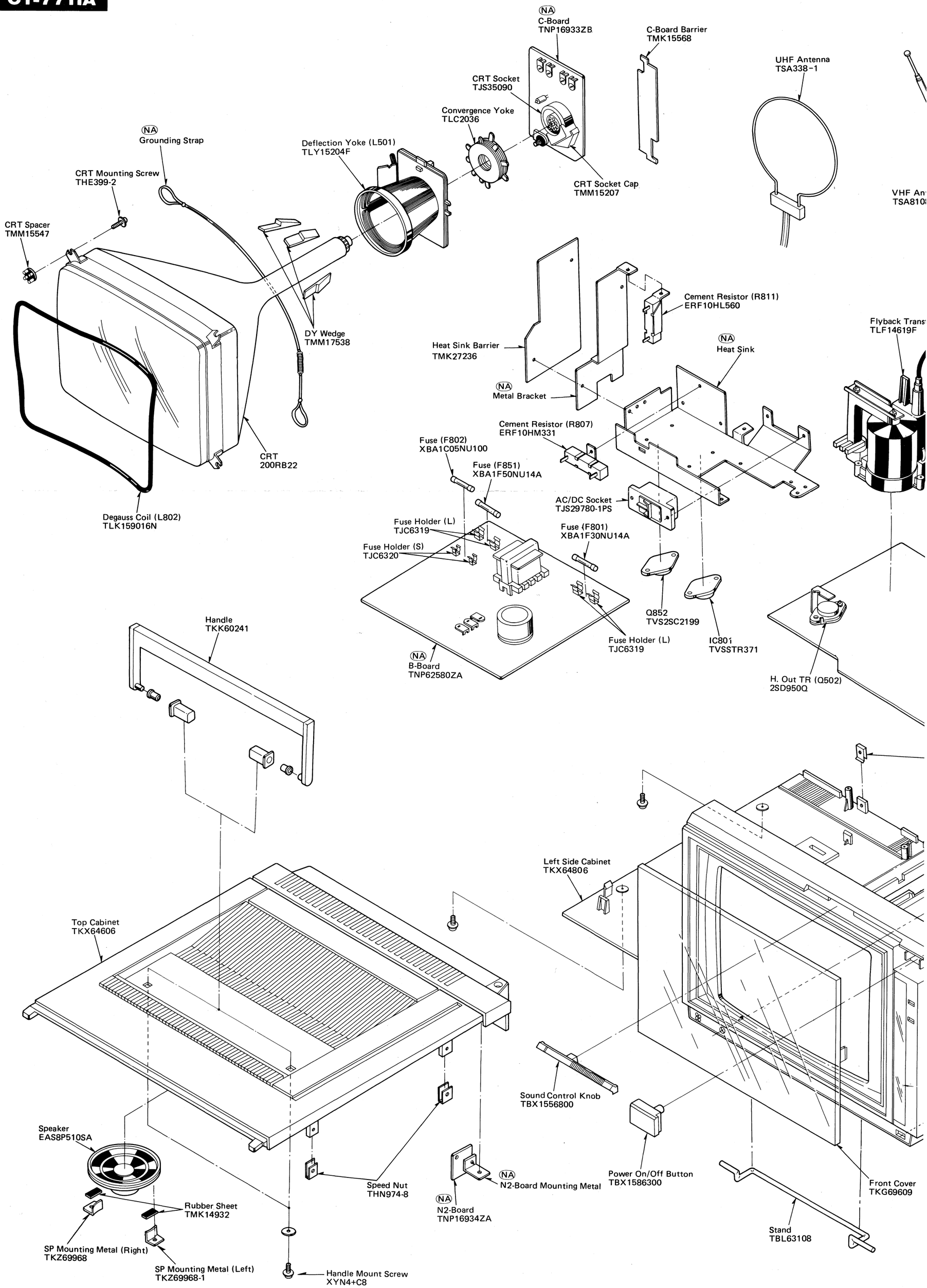
oint position

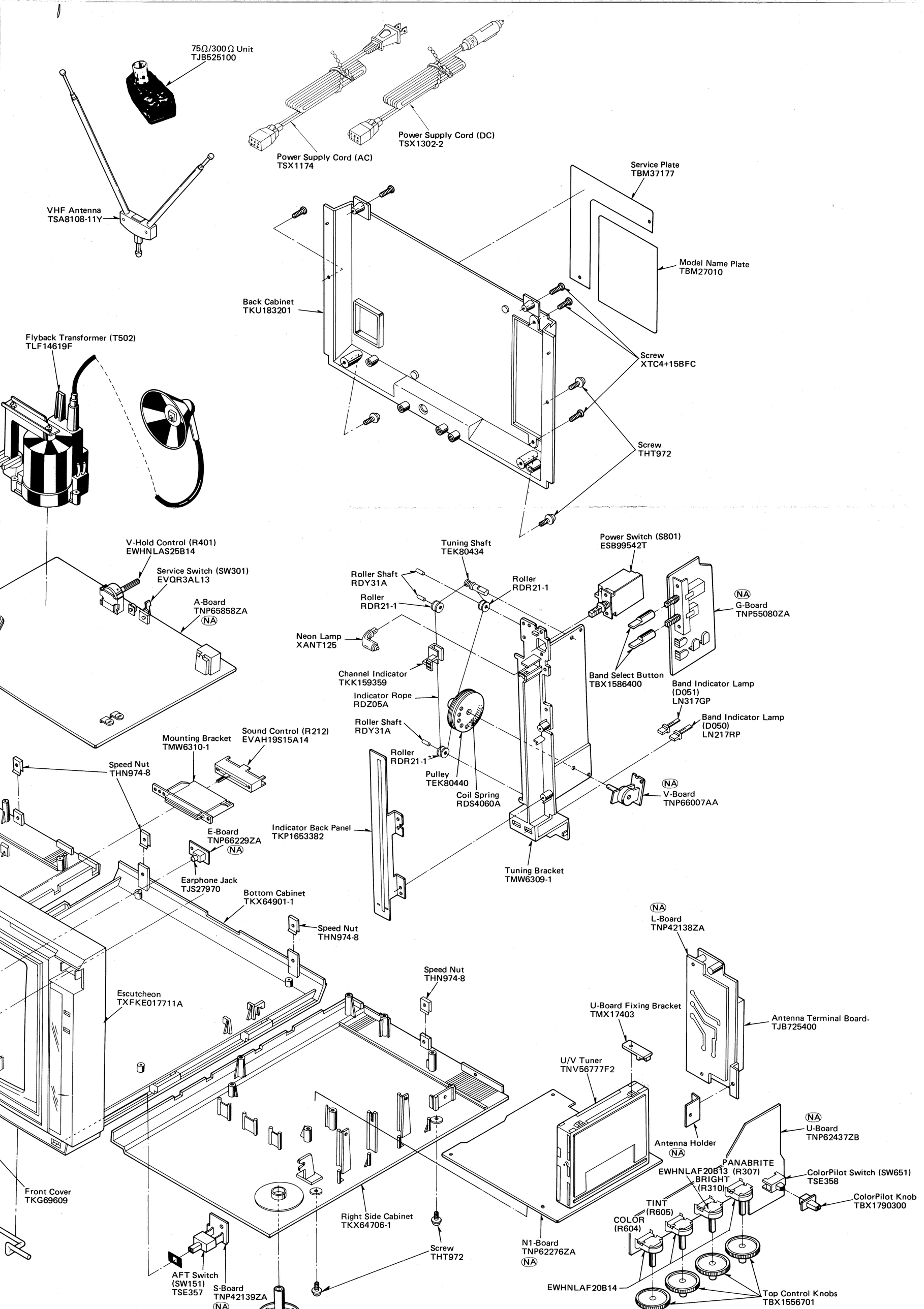
SUREMENT

ed by a volt ohm meter with DC 20k OHM/V receiving color bar signal,
are set to the maximum position.
(↗) is found, connection is easily found along with the direction of an arrow.
diagram of a board is described in most than two places, they are encircled with
–)

agram is the latest at the time of printing and subject to change without notice.

CT-7711A


(NA) C-Board TNP16933ZB
C-Board Barrier TMK15568
UHF Antenna TSA338-1
CRT Socket TJS35090
Convergence Yoke TLC2036
(NA) Grounding Strap
Deflection Yoke (L501) TLY15204F
CRT Socket Cap TMM15207
CRT Mounting Screw THE399-2
CRT Spacer TMM15547
DY Wedge TMM17538
Cement Resistor (R811) ERF10HL560
Heat Sink Barrier TMK27236
(NA) Heat Sink
(NA) Metal Bracket
Flyback Trans TLF14619F
Cement Resistor (R807) ERF10HM331
Fuse (F802) XBA1C05NU100
Fuse (F851) XBA1F50NU14A
AC/DC Socket TJS29780-1PS
CRT 200RB22
Degauss Coil (L802) TLK159016N
Fuse Holder (L) TJC6319
Fuse Holder (S) TJC6320
Fuse (F801) XBA1F30NU14A
Q852 TVS2SC2199
IC801 TVSSTR371
Fuse Holder (L) TJC6319
(NA) B-Board TNP62580ZA
H. Out TR (Q502) 2SD950Q
Handle TKK60241
Left Side Cabinet TKX64806
Top Cabinet TKX64606
Sound Control Knob TBX1556800
Speaker EAS8P510SA
Power On/Off Button TBX1586300
Front Cover TKG69609
Speed Nut THN974-8
(NA) N2-Board Mounting Metal
(NA) N2-Board TNP16934ZA
Rubber Sheet TMK14932
Stand TBL63108
SP Mounting Metal (Right) TKZ69968
SP Mounting Metal (Left) TKZ69968-1
Handle Mount Screw XYN4+C8


75Ω/300Ω Unit
TJB525100
Power Supply Cord (AC)
TSX1174
Power Supply Cord (DC)
TSX1302-2
VHF Antenna
TSA8108-11Y
Service Plate
TBM37177
Model Name Plate
TBM27010
Back Cabinet
TKU183201
Screw
XTC4+15BFC
Screw
THT972
Flyback Transformer (T502)
TLF14619F
V-Hold Control (R401)
EWHNLAS25B14
Service Switch (SW301)
EVQR3AL13
A-Board
TNP65858ZA
(NA)
Tuning Shaft
TEK80434
Power Switch (S801)
ESB99542T
Roller Shaft
RDY31A
Roller
RDR21-1
Roller
RDR21-1
(NA)
G-Board
TNP55080ZA
Neon Lamp
XANT125
Channel Indicator
TKK159359
Indicator Rope
RDZ05A
Band Select Button
TBX1586400
Band Indicator Lamp
(D051)
LN317GP
Band Indicator Lamp
(D050)
LN217RP
Roller Shaft
RDY31A
Roller
RDR21-1
Pulley
TEK80440
Coil Spring
RDS4060A
(NA)
V-Board
TNP66007AA
Mounting Bracket
TMW6310-1
Sound Control (R212)
EVAH19S15A14
Speed Nut
THN974-8
Indicator Back Panel
TKP1653382
Tuning Bracket
TMW6309-1
E-Board
TNP66229ZA
(NA)
Earphone Jack
TJS27970
Bottom Cabinet
TKX64901-1
(NA)
L-Board
TNP42138ZA
Speed Nut
THN974-8
Speed Nut
THN974-8
Escutcheon
TXFKE017711A
U-Board Fixing Bracket
TMX17403
Antenna Terminal Board
TJB725400
U/V Tuner
TNV56777F2
(NA)
U-Board
TNP62437ZB
Antenna Holder
(NA)
PANABRITE
EWHNLAF20B13 (R307)
BRIGHT
(R310)
ColorPilot Switch (SW651)
TSE358
ColorPilot Knob
TBX1790300
TINT
(R605)
COLOR
(R604)
Front Cover
TKG69609
Right Side Cabinet
TKX64706-1
Screw
THT972
N1-Board
TNP62276ZA
(NA)
AFT Switch
(SW151)
TSE357
S-Board
TNP42139ZA
(NA)
EWHNLAF20B14
Top Control Knobs
TBX1556701

REPLACEMENT PARTS LIST

Important Safety Notice

Components identified by shaded area have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

Note: TNP65858ZA (A-Board), TNP62580ZA (B-Board), TNP16933ZB (C-Board), TNP66229ZA (E-Board), TNP55080ZA (G-Board), TNP42138ZA (L-Board), TNP62276ZA (N1-Board), TNP16934ZA (N2-Board), TNP42139ZA (S-Board), TNP62437ZB (U-Board), and TNP66007AA (V-Board) are not available as a complete printed circuit board.

Ref. No.	Part No.	Description
	RESISTORS	
R001	ERD25TJ102	C 1Kohm J 1/4W
R002	ERD25TJ100	C 10ohm J 1/4W
R003	ERD25TJ152	C 1.5Kohm J 1/4W
R004	EWH3AH003B15	CONTROL B100Kohm
R005	EVN61AA00B25	CONTROL B200Kohm
R006	EVN61AA00B34	CONTROL B 30Kohm
R007	EVN61AA00B53	CONTROL B 5Kohm
R008	EVN61AA00B25	CONTROL B200Kohm
R009	EVN61AA00B53	CONTROL B 5Kohm
R010	EVN61AA00B24	CONTROL B 20Kohm
R012	ERD25TJ152	C 1.5Kohm J 1/4W
R013	ERD25TJ120	C 12ohm J 1/4W
R021	ERD25TJ561	C 560ohm J 1/4W
R022	ERD25TJ392	C 3.9Kohm J 1/4W
R023	ERD2CJ120	F 12ohm J 2W
R024	ERD50FJ1R0	C 1ohm J 1/2W
R025	ERD25FJ2R2	C 2.2ohm J 1/4W
R026	ERD25TJ100	C 10ohm J 1/4W
R101	ERD25TJ153	C 15Kohm J 1/4W
R102	ERD25TJ562	C 5.6Kohm J 1/4W
R103	ERD25TJ681	C 680ohm J 1/4W
R106	ERD25TJ272	C 2.7Kohm J 1/4W
R107	EVN50AA00B53	CONTROL B 5Kohm
R108	ERD25TJ182	C 1.8Kohm J 1/4W
R109	ERD25TJ562	C 5.6Kohm J 1/4W
R110	ERD25TJ474	C 470Kohm J 1/4W
R111	ERD25TJ223	C 22Kohm J 1/4W
R112	ERD25TJ272	C 2.7Kohm J 1/4W
R113	ERD25TJ183	C 18Kohm J 1/4W
R114	ERD25TJ102	C 1Kohm J 1/4W
R115	ERD25TJ821	C 820ohm J 1/4W
R116	ERD25TJ271	C 270ohm J 1/4W
R117	ERD25TJ562	C 5.6Kohm J 1/4W
R118	ERD25FJ4R7	C 4.7ohm J 1/4W
R119	ERD25TJ151	C 150ohm J 1/4W
R151	ERD25TJ123	C 12Kohm J 1/4W
R152	ERD25TJ153	C 15Kohm J 1/4W
R153	ERD25TJ101	C 100ohm J 1/4W
R203	ERD25FJ330	C 33ohm J 1/4W
R204	ERD25TJ104	C 100Kohm J 1/4W
R205	ERD25TJ473	C 47Kohm J 1/4W
R206	ERD25TJ391	C 390ohm J 1/4W
R207	ERD25TJ391	C 390ohm J 1/4W
R209	ERD25TJ153	C 15Kohm J 1/4W
R210	ERD25TJ222	C 2.2Kohm J 1/4W
R211	ERD25TJ331	C 330ohm J 1/4W
R212	EVAH19S15A14	CONTROL A 10Kohm
R213	ERD25TJ101	C 100ohm J 1/4W
R221	ERD25TJ682	C 6.8Kohm J 1/4W
R222	ERD25TJ103	C 10Kohm J 1/4W
R223	ERD25TJ223	C 22Kohm J 1/4W
R225	ERD25TJ103	C 10Kohm J 1/4W
R226	ERD25TJ472	C 4.7Kohm J 1/4W
R227	ERD25TJ331	C 330ohm J 1/4W
R228	ERD25TJ271	C 270ohm J 1/4W
R230	ERD25TJ331	C 330ohm J 1/4W
R231	ERD25TJ332	C 3.3Kohm J 1/4W
R251	ERD25TJ821	C 820ohm J 1/4W
R252	ERD25TJ391	C 390ohm J 1/4W
R253	ERD25TJ222	C 2.2Kohm J 1/4W
R254	ERD50TJ331	C 330ohm J 1/2W
R255	ERD25TJ563	C 56Kohm J 1/4W
R256	ERD25TJ101	C 100ohm J 1/4W
R257	ER012AJ270F	F 27ohm J 1/2W
R258	ERD25TJ3R3	C 3.3ohm J 1/4W
R259	ERD25TJ101	C 100ohm J 1/4W
R260	ERD25TJ102	C 1Kohm J 1/4W
R302	EVN61AA00B13	CONTROL B 1Kohm
R307	EWHNLAF20B14	CONTROL B 10Kohm
R308	ERD25TJ332	C 3.3Kohm J 1/4W
R309	ERD25TJ332	C 3.3Kohm J 1/4W
R310	EWHNLAF20B13	CONTROL B 1Kohm
R311	ERD25TJ472	C 4.7Kohm J 1/4W
R312	EVN61AA00B53	CONTROL B 5Kohm
R314	ERD25TJ183	C 18Kohm J 1/4W
R315	ERD25TJ272	C 2.7Kohm J 1/4W
R316	ERD25TJ391	C 390ohm J 1/4W
R317	ERD25TJ391	C 390ohm J 1/4W
R318	ERD25TJ391	C 390ohm J 1/4W
R319	ERD25TJ681	C 680ohm J 1/4W
R320	ERD25TJ153	C 15Kohm J 1/4W
R322	ERD25TJ101	C 100ohm J 1/4W
R324	ERD25TJ821	C 820ohm J 1/4W
R325	ERD25TJ101	C 100ohm J 1/4W
R327	ERD25TJ221	C 220ohm J 1/4W
R331	ERD25TJ221	C 220ohm J 1/4W
R332	ERD25TJ221	C 220ohm J 1/4W
R333	ERD25TJ682	C 6.8Kohm J 1/4W

Ref. No.	Part No.	Description
R334	ERD25TJ103	C 10Kohm J 1/4W
R335	ERD25TJ331	C 330ohm J 1/4W
R336	ERD25TJ151	C 150ohm J 1/4W
R337	ERD25TJ151	C 150ohm J 1/4W
R338	ERD25TJ561	C 560ohm J 1/4W
R339	ERD25TJ331	C 330ohm J 1/4W
R340	ERD25TJ391	C 390ohm J 1/4W
R341	ERD25TJ102	C 1Kohm J 1/4W
R342	ERD25TJ123	C 12Kohm J 1/4W
R343	ERD25TJ472	C 4.7Kohm J 1/4W
R344	ERD25TJ153	C 15Kohm J 1/4W
R345	ERD25TJ221	C 220ohm J 1/4W
R346	ERD25TJ151	C 150ohm J 1/4W
R347	ERD25TJ151	C 150ohm J 1/4W
R348	ERD25TJ821	C 820ohm J 1/4W
R349	ERC12ZGM395	S 3.9Mohm M 1/2W
R351	EVN61AA00B14	CONTROL B 10Kohm
R352	ERD25TJ562	C 5.6Kohm J 1/4W
R353	EVN61AA00B33	CONTROL B 3Kohm
R354	ERD50FJ333	C 33Kohm J 1/2W
R355	ERC12GM272	S 2.7Kohm M 1/2W
R356	EVN61AA00B14	CONTROL B 10Kohm
R357	ERD25TJ562	C 5.6Kohm J 1/4W
R358	EVN61AA00B33	CONTROL B 3Kohm
R359	ERD50FJ333	C 33Kohm J 1/2W
R360	ERC12GM272	S 2.7Kohm M 1/2W
R363	ERD25TJ123	C 12Kohm J 1/4W
R364	ERD25TJ152	C 1.5Kohm J 1/4W
R365	ERD50FJ333	C 33Kohm J 1/2W
R366	ERC12GM272	S 2.7Kohm M 1/2W
R367	ERC12GM105	S 1Mohm M 1/2W
R368	EVME6U10KB17	CONTROL B 10Mohm
R371	ERD25TJ472	C 4.7Kohm J 1/4W
R372	ERD25TJ151	C 150ohm J 1/4W
R375	ERD25TJ151	C 150ohm J 1/4W
R376	ERD25TJ221	C 220ohm J 1/4W
R377	ERD25TJ153	C 15Kohm J 1/4W
R378	ERD25TJ822	C 8.2Kohm J 1/4W
R379	ERD25TJ101	C 100ohm J 1/4W
R380	ERD25TJ153	C 15Kohm J 1/4W
R381	ERD25TJ822	C 8.2Kohm J 1/4W
R382	ERD25TJ750	C 75ohm J 1/4W
R391	ERD25TJ103	C 10Kohm J 1/4W
R392	ERD25TJ102	C 1Kohm J 1/4W
R393	ERD25TJ102	C 1Kohm J 1/4W

Ref. No.	Part No.	Description
R401	EWHNLAS25B14	CONTROL B 10Kohm
R402	ERD25TJ103	C 10Kohm J 1/4W
R403	ERD25TJ682	C 6.8Kohm J 1/4W
R404	ERD25TJ122	C 1.2Kohm J 1/4W
R405	ERD50TJ102	C 1Kohm J 1/2W
R406	ERD25FJ101	C 100ohm J 1/4W
R407	ERD50FJ100	C 10ohm J 1/2W
R408	ERD25TJ332	C 3.3Kohm J 1/4W
R409	EVTK0CA00B52	CONTROL B 500ohm
R410	ERD25TJ561	C 560ohm J 1/4W
R411	ERD50FJ3R3	C 3.3ohm J 1/2W
R412	ERD25FJ560	C 56ohm J 1/4W
R413	ERD25TJ221	C 220ohm J 1/4W
R414	ERD25TJ151	C 150ohm J 1/4W
R415	ERD50FJ561	C 560ohm J 1/2W
R416	ERD50TJ332	C 3.3Kohm J 1/2W
R417	ERD25FJ121	C 120ohm J 1/4W
R501	ERD25TJ331	C 330ohm J 1/4W
R502	ERD25TJ332	C 3.3Kohm J 1/4W
R503	ERD25TJ103	C 10Kohm J 1/4W
R505	ERD25TJ222	C 2.2Kohm J 1/4W
R506	EVTK0CA00B23	CONTROL B 2Kohm
R507	ERD25TJ393	C 39Kohm J 1/4W
R508	ERG2ANJ103	M 10Kohm J 2W
R509	ERD25TJ561	C 560ohm J 1/4W
R510	ERD25TJ681	C 680ohm J 1/4W
R511	ERG1ANJ562H	M 5.6Kohm J 1W
R512	ERG2ANJ272	M 2.7Kohm J 2W
R513	ER012HKR39	F 0.39ohm K 1/2W
R514	ERQ2CJ1R8	F 1.8ohm J 1/2W
R516	ERD25TJ223	C 22Kohm J 1/4W
R517	ERG1ANJ330H	M 33ohm J 1W
R518	ERD25TJ393	C 39Kohm J 1/4W
R519	ERD25FJ561	C 560ohm J 1/4W
R520	ERD25TJ564	C 560Kohm J 1/4W
R521	ERD25TJ391	C 390ohm J 1/4W
R522	ERD25TJ221	C 220ohm J 1/4W
R523	ERD25TJ101	C 100ohm J 1/4W
R524	ERD25TJ393	C 39Kohm J 1/4W
R525	ERG1ANJ333	M 33Kohm J 1W
R526	ERD25TJ681	C 680ohm J 1/4W
R527	ERW12PKR27	W 0.27ohm K 1/2W
R529	ERD25FJ271	C 270ohm J 1/4W
R530	ERD25FJ561	C 560ohm J 1/4W
R531	ERD25TJ102	C 1Kohm J 1/4W

Ref. No.	Part No.	Description
R532	ERD25TJ273	C 27Kohm J 1/4W
R533	ERD50TJ3R3	C 3.3ohm J 1/2W
R601	ERD25TJ102	C 1Kohm J 1/4W
R602	ERD25TJ102	C 1Kohm J 1/4W
R604	EWHNLAF20B14	CONTROL B 10Kohm
R605	EWHNLAF20B14	CONTROL B 10Kohm
R606	ERD25TJ394	C 390Kohm J 1/4W
R607	ERD25TJ102	C 1Kohm J 1/4W
R651	ERD25TJ682	C 6.8Kohm J 1/4W
R652	ERD25TJ123	C 12Kohm J 1/4W
R653	ERD25TJ822	C 8.2Kohm J 1/4W
R654	ERD25TJ183	C 18Kohm J 1/4W
R655	ERD25TJ153	C 15Kohm J 1/4W
R656	ERD25TJ392	C 3.9Kohm J 1/4W
R657	ERD25TJ273	C 27Kohm J 1/4W
R658	EVNK6AA00B15	CONTROL B100Kohm
R659	ERD25TJ224	C 220Kohm J 1/4W
R660	ERD25TJ473	C 47Kohm J 1/4W
R661	ERD25TJ563	C 56Kohm J 1/4W
R801	ERF3ATK1R0	W 1ohm K 3W
R804	ERD25TJ103	C 10Kohm J 1/4W
R805	ERD25FJ470	C 47ohm J 1/4W
R806	ERD25TJ224	C 220Kohm J 1/4W
R807	ERF10HM331	W 330ohm J 10W
R808	ERD25FJ560	C 56ohm J 1/4W
R809	ERD50TJ124	C 120Kohm J 1/2W
R810	ERC12GK105	S 1Mohm K 1/2W
R811	ERF10HL560	W 56ohm J 10W
R851	ERD25TJ104	C 100Kohm J 1/4W
R852	ERD25TJ104	C 100Kohm J 1/4W
R853	ERD25TJ104	C 100Kohm J 1/4W
R854	ERD25TJ473	C 47Kohm J 1/4W
R855	ERD25TJ183	C 18Kohm J 1/4W
R856	ERD25TJ472	C 4.7Kohm J 1/4W
R857	ERD25TJ123	C 12Kohm J 1/4W
R858	ERD25TJ183	C 18Kohm J 1/4W
R859	ERD25TJ123	C 12Kohm J 1/4W
R860	ERD25TJ152	C 1.5Kohm J 1/4W
R861	ERG2ANJ470H	M 47ohm J 2W
R864	ERD50TJ104	C 100Kohm J 1/2W
R865	ERD25TJ182	C 1.8Kohm J 1/4W
R866	ERD25TJ392	C 3.9Kohm J 1/4W
R867	EVN61AA00B23	CONTROL B 2Kohm
R868	ERD25TJ103	C 10Kohm J 1/4W
R869	ERD25TJ221	C 220ohm J 1/4W
R870	ERD25TJ183	C 18Kohm J 1/4W
R871	ERD25TJ105	C 1Mohm J 1/4W
R872	ERD25TJ472	C 4.7Kohm J 1/4W
R873	ERD50TJ562	C 5.6Kohm J 1/2W
R874	EVN61AA00B52	CONTROL B 500ohm
R875	ERD25TJ821	C 820ohm J 1/4W
R876	ERD25TJ333	C 33Kohm J 1/4W
R877	ERD25TJ472	C 4.7Kohm J 1/4W
R878	ERD25TJ222	C 2.2Kohm J 1/4W
R879	ERD25TJ103	C 10Kohm J 1/4W
R880	ERD25TJ562	C 5.6Kohm J 1/4W
R881	ERD25TJ392	C 3.9Kohm J 1/4W
R882	ERD25TJ183	C 18Kohm J 1/4W
R883	ERD50TJ222	C 2.2Kohm J 1/2W
R884	ERD25TJ330	C 33ohm J 1/4W
R885	ERD25TJ272	C 2.7Kohm J 1/4W
R886	ERD25TJ561	C 560ohm J 1/4W
R887	EVN61AA00B52	CONTROL B 500ohm
R888	ERD50TJ124	C 120Kohm J 1/2W
R889	ERD25TJ183	C 18Kohm J 1/4W
R890	ERD50TJ333	C 33Kohm J 1/2W
R891	ERD25FJ331	C 330ohm J 1/4W
	CAPACITORS	
C001	ECEA16Z100	E 100uF 16V
C002	ECEB1CU471	E 470uF 16V
C003	ECKF1H103ZF	C 0.01uF Z 50V
C004	ECEA50ZR22	E 0.22uF 50V
C005	ECEA1CS330	E 33uF 16V
C020	ECEA1JS330	E 33uF 63V
C021	ECEA25Z33	E 33uF 25V
C022	ECKD2H682MD	C 6800pF M 500V
C023	ECKD2H272KB2	C 2700pF K 500V
C024	ECKF1H103ZF	C 0.01uF Z 50V
C025	ECEA1CS471	E 470uF 16V
C026	ECKD2H682MD	C 6800pF M 500V
C101	ECCF1H101J	C 100pF J 50V
C102	ECCF1H120JC	C 12pF J 50V
C103	ECKF1H102KB	C 1000pF K 50V
C104	ECCF1H390J	C 39pF J 50V
C105	ECKF1H103ZF	C 0.01uF Z 50V
C106	ECKF1H103ZF	C 0.01uF Z 50V
C107	ECKF1H103ZF	C 0.01uF Z 50V
C108	ECEA50Z1	E 1uF 50V

Ref. No.	Part No.	Description				Ref. No.	Part No.	Description				
C109	ECEA1HSR47	E	0.47uF		50V	C305	ECEA1CS100	E	10uF		16V
C110	ECKF1H103ZF	C	0.01uF	Z	50V	C306	ECEA1ES4R7	E	4.7uF		25V
C111	ECCF1H820JP	C	82pF	J	50V	C307	ECQM1H103KZ	P	0.01uF	K	50V
C113	ECEA1CS101	E	100uF		16V	C308	ECEA1HS3R3	E	3.3uF		50V
C114	ECKF1H103ZF	C	0.01uF	Z	50V	C309	ECKF1H223ZF	C	0.022uF	Z	50V
C115	ECCF1H120J	C	12pF	J	50V	C331	ECEA1CS100	E	10uF		16V
C116	ECKF1H103ZF	C	0.01uF	Z	50V	C332	ECEA1CS100	E	10uF		16V
C117	ECEA50Z2R2	E	2.2uF		50V	C333	ECEA1HS2R2	E	2.2uF		50V
C118	ECKF1H103ZF	C	0.01uF	Z	50V	C334	ECEA1CS100	E	10uF		16V
C119	ECEA16Z100	E	100uF		16V	C335	ECKF1H681KB	C	680pF	K	50V
C120	ECKF1H103ZF	C	0.01uF	Z	50V	C351	ECKF1H221KB	C	220pF	K	50V
C121	ECKF1H103ZF	C	0.01uF	Z	50V	C352	ECKF1H221KB	C	220pF	K	50V
C123	ECEA50ZR22	E	0.22uF		50V	C353	ECKF1H181KB	C	180pF	K	50V
C124	ECCF1H120JC	C	12pF	J	50V	C355	ECKD3A681KB9	C	680pF	K	1KV
C125	ECCF1H030DC	C	3pF	D	50V	C356	ECKF1H103ZF	C	0.01uF	Z	50V
C151	ECCF1H080CC	C	8pF	C	50V	C372	ECEA0JN470S	E	47uF		6.3V
C152	ECCF1H560JC	C	56pF	J	50V	C373	ECEA0JS102	E	1000uF		6.3V
C153	ECKF1H223ZF	C	0.022uF	Z	50V	C374	ECEA1CS100	E	10uF		16V
C154	ECEA1HS010	E	1uF		50V	C401	ECQM1H273KZ	P	0.027uF	K	50V
C201	ECQM1H473KZ	P	0.047uF	K	50V	C402	ECSZ25EF2R2N	T	2.2uF		25V
C202	ECEA1CS471	E	470uF		16V	C403	ECSZ16EF3R3N	T	3.3uF		16V
C203	ECQM1H822KZ	P	8200pF	K	50V	C404	ECEA25Z22	E	22uF		25V
C204	ECEA1CS100	E	10uF		16V	C405	ECEA1ES221	E	220uF		25V
C205	ECEA1CS100	E	10uF		16V	C406	ECEA25Z4R7	E	4.7uF		25V
C206	ECCF1H820JL	C	82pF	J	50V	C408	ECEA1CS101	E	100uF		16V
C207	ECCF1H120JP	C	12pF	J	50V	C409	ECEA1CS222	E	2200uF		16V
C208	ECQM1H183KZ	P	0.018uF	K	50V	C410	ECKF1H223ZF	C	0.022uF	Z	50V
C209	ECQM1H123KZ	P	0.012uF	K	50V	C411	ECEA2AS100	E	10uF		100V
C210	ECEA1CS101	E	100uF		16V	C412	ECEA50Z2R2	E	2.2uF		50V
C211	ECCF1H470J	C	47pF	J	50V	C413	ECKF1H221KB	C	220pF	K	50V
C212	ECCF1H080CC	C	8pF	C	50V	C501	ECEA1HS2R2	E	2.2uF		50V
C222	ECEA1CS100	E	10uF		16V	C502	ECEA1CS100	E	10uF		16V
C223	ECEA1CS100	E	10uF		16V	C503	ECEA1HS2R2	E	2.2uF		50V
C226	ECEA1CS470	E	47uF		16V	C504	ECQM1H153KZ	P	0.015uF	K	50V
C251	ECEA1HS4R7	E	4.7uF		50V	C505	ECQK1472JZ	P	4700pF	J	100V
C252	ECEA1CS331	E	330uF		16V	C506	ECEA1CS101	E	100uF		16V
C253	ECEA1CS471	E	470uF		16V	C507	ECQM1H153KZ	P	0.015uF	K	50V
C254	ECQM1H103KZ	P	0.01uF	K	50V	C508	ECQM1H473KZ	P	0.047uF	K	50V
C255	ECKF1H102KB	C	1000pF	K	50V	C509	ECEA160V33W	E	33uF		160V
C256	ECQM1H273KZ	P	0.027uF	K	50V	C510	ECKD2H332KB2	C	3300pF	K	500V
C257	ECKF1H152KB	C	1500pF	K	50V	C511	ECKD3D102KBN	C	1000pF	K	2KV
C258	ECEA1HNR47S	E	0.47uF		50V	C512	ECQF2H274JZA	F	0.27uF	J	200V
C301	ECCF1H101J	C	100pF	J	50V	C513	ECEA1ES471	E	470uF		25V
C303	ECEA1CN100S	E	10uF		16V	C514	ECEA1HS100	E	10uF		50V
C304	ECKF1H121KB	C	120pF	K	50V	C515	ECEA0JS330	E	33uF		6.3V

Ref. No.	Part No.	Description
C516	ECQM1H222KZ	P 2200pF K 50
C517	ECKF1H102KB	C 1000pF K 50V
C518	ECKD3D561KB9	C 560pF K 2KV
C519	ECKF1H682KB	C 6800pF K 50V
C520	ECKD2H102KB2	C 1000pF K 500V
C521	ECEA2CS010	E 1uF 160V
C522	ECKD2H102KB2	C 1000pF K 500V
C525	ECKD3D681KB9	C 680pF K 2KV
C526	ECKD3D561KB9	C 560pF K 2KV
C601	ECCF1H390J	C 39pF J 50V
C602	ECKF1H103ZF	C 0.01uF Z 50V
C603	ECKF1H103ZF	C 0.01uF Z 50V
C604	ECEA1HS010	E 1uF 50V
C605	ECEA50ZR22	E 0.22uF 50V
C606	ECEA1EN4R7S	E 4.7uF 25V
C607	ECEA50ZR22	E 0.22uF 50V
C608	ECEA50Z1	E 1uF 50V
C609	ECKF1H391KB	C 390pF K 50V
C610	ECKF1H272KB	C 2700pF K 50V
C613	ECCF1H220J	C 22pF J 50V
C614	ECCF1H101J	C 100pF J 50V
C615	ECEA1CS102	E 1000uF 16V
C616	ECCF1H470J	C 47pF J 50V
C651	ECEA1HS010	E 1uF 50V
C652	ECKF1H391KB	C 390pF K 50V
C653	ECCF1H180JC	C 18pF J 50V
C654	ECCF1H220JC	C 22pF J 50V
C655	ECV1ZW40X32	Trimmer
C657	ECCF1H330J	C 33pF J 50V
C658	ECCF1H470J	C 47pF J 50V
C659	ECKF1H103ZF	C 0.01uF Z 50V
C660	ECCF1H560JC	C 56pF J 50V
C661	ECKF1H103ZF	C 0.01uF Z 50V
C801	ECKD2H103PE7	C 0.01uF P 500V
C802	ECKD2H103PE7	C 0.01uF P 500V
C803	ECKD2H103PE7	C 0.01uF P 500V
C804	ECKD2H103PE7	C 0.01uF P 500V
C805	ECET2DR221SL	E 220uF 200V
C806	ECEA2CS220	E 22uF 160V
C807	ECKD2H103PE7	C 0.01uF P 500V
C808	ECQU1A104ME	P 0.1uF M
C809	ECQU1A472ME	P 4700pF M
C851	ECKF1H391KB	C 390pF K 50V
C852	ECKF1H101KB	C 100pF K 50V
C853	ECKF1H101KB	C 100pF K 50V

Ref. No.	Part No.	Description
C854	ECQP1222GZ	P 2200pF G 100V
C855	ECEA1CS100	E 10uF 16V
C856	ECQM1H104KZ	P 0.1uF K 50V
C858	ECQM1H562KZ	P 5600pF K 50V
C859	ECEA1VF471R	E 470uF 35V
C861	ECKD3A102KB9	C 1000pF K 1KV
C862	ECEA2CS101	E 100uF 160V
C863	ECKD3A221KB9	C 220pF K 1KV
C864	ECEA1ES221	E 220uF 25V
C865	ECQM1H104KZ	P 0.1uF K 50V
C866	ECKF1H103ZF	C 0.01uF Z 50V
C867	ECQM1H224MZ	P 0.22uF M 50V
C868	ECEA1AS221	E 220uF 10V
C870	ECEA160G3R3	E 3.3uF 160V
C871	ECKF1H181KB	C 180pF K 50V
C873	ECKD3A221KB9	C 220pF K 1KV
C874	ECEA1HS470	E 47uF 50V
C875	ECKF1H103ZF	C 0.01uF Z 50V
C877	ECEA1VS331	E 330uF 35V
C878	ECKF1H103ZF	C 0.01uF Z 50V
C879	ECEA1AN220S	E 22uF 10V
C880	ECKF1H103ZF	C 0.01uF Z 50V
C881	ECKD2H561KB2	C 560pF K 500V
	COILS	
L101	TLQR39N205C	Peaking 0.39uH
L102	TLQR56N205C	Peaking 0.56uH
L103	TLQ100K126	Peaking 10uH
L201	TLQ120K205C	Peaking 12uH
L251	TLQ220K126Y	Peaking 22uH
L301	TLK150834	Delay Line
L331	TLQ470K205C	Peaking 47uH
L351	TLT221K999G	Peaking 220uH
L501	TLY15204F	Deflection Yoke
L502	TLP408C	Choke Coil
L503	TLT100K109	Peaking 10uH
L601	TLQ082K205C	Peaking 8.2uH
L602	TLQ082K205C	Peaking 8.2uH
L603	TLQ150K205C	Peaking 15uH
L651	TLQ330K205C	Peaking 33uH
L652	TLQ560K205C	Peaking 56uH
L653	TLT561K999G	Peaking 560uH
L801	TLF6506P	Line Filter
L802	TLK159016N	Degauss Coil
L852	TLT056K109	Peaking 5.6uH

Ref. No.	Part No.	Description
L853	TLT056K109	Peaking 5.6uH
L854	TSC909	Choke Coil
L855	TSC909	Choke Coil
L856	TLT056K109	Peaking 0.56uH
L857	TSC909	Choke Coil
L858	TSC909	Choke Coil
	TRANSFORMERS	
T101	TLI81368-1	VIF Trans.
T102	TLI63307-1	VIF Trans.
T103	TLI153758	VIF Trans.
T151	TLI67394-1	VIF Trans.
T201	TLS63318-2	SIF Trans.
T202	TLS133305	SIF Trans.
T351	ETD24Z4AY	Video Trans.
T501	TLH6436	H. Drive Trans.
T502	TLF14619F	Flyback Trans.
T503	TLH8707E	Pincushion Trans.
T851	TLP15903	Converter Drive
T852	TLP15706	Converter Output
	DIODES	
D001	TVS1S2076	Diode
D002	TVS1S2076	Diode
D003	TVSRGP10J	Diode
D004	TVSRGP10J	Diode
D005	TVSRD6.2FB1	Zener Diode 6.2V
D006	TVSRD6.2FB1	Zener Diode 6.2V
D050	LN217RP	LED
D051	LN317GP	LED
D221	TVS1S2076	Diode
D222	TVS1S2076	Diode
D251	TVS1S2076	Diode
D252	TVS1S2076	Diode
D302	TVS1S2076	Diode
D331	TVS1S2076	Diode
D371	TVS1S2076	Diode
D372	TVS1S2076	Diode
D402	TVSRD15EB2	Zener Diode 15V
D403	TVS1S2076	Diode
D404	TVS1S2076	Diode
D405	MA27B	Diode
D501	TVSRGP10J	Diode
D502	TVS1S2076	Diode

Ref. No.	Part No.	Description
D503	MA26WO	Diode
D504	TVS1S2076	Diode
D505	TVSRD20EBM	Zener Diode 20V
D506	TVSRD8.2EB1	Zener Diode 8.2V
D507	TVSRD12FB2	Zener Diode 12V
D508	TVS1S954	Diode
D509	TVS1S954	Diode
D511	TVSRD4.7EB2	Zener Diode 4.7V
D651	MA27T-A	Diode
D652	TVS1S954	Diode
D653	TVS1S954	Diode
D801	TVSERC0510	Diode
D802	TVSERC0510	Diode
D803	TVSERC0510	Diode
D804	TVSERC0510	Diode
D805	ERPF5B0M080F	Posistor
D806	TVSRGP10J	Diode
D851	TVS1S2076	Diode
D852	MA26WO	Diode
D854	TVSUF2B	Diode
D855	TVSRD5.1EB1	Zener Diode 5.1V
D856	TVS1S2076	Diode
D857	TVSRGP10J	Diode
D859	TVS1S2076	Diode
D860	TVS1S2076	Diode
D861	TVSRD18EB	Zener Diode 18V
D862	TVSRGP10J	Diode
D863	TVSRD22EB1	Zener Diode 22V
	TRANSISTORS	
Q101	2SC1687	VIF Amp
Q201	2SD636-R.S.T	Audio Amp
Q221	2SD636-R.S.T	Audio Amp
Q251	2SC1383-QNC	Audio Out
Q252	2SC1383-QNC	Audio Out
Q331	2SD636-R.S.T	Video Amp
Q332	2SD636-R.S.T	Video Amp
Q333	2SD636-R.S.T	Video Amp
Q334	2SD636-R.S.T	Video Amp
Q351	2SC1473-QNC	Video Out (B)
Q352	2SC1473-QNC	Video Out (R)
Q353	2SC1473-QNC	Video Out (G)
Q371	2SD638-S.T	Video Amp
Q372	2SD638-R.S.T	Video Amp
Q373	2SD638-R.S.T	Video Amp

Ref. No.	Part No.	Description
Q401	2SD856-Q	V. Out
Q402	2SD856-Q	V. Out
Q501	2SC1573A-R	H. Drive
Q502	2SD950Q	H. Out
Q503	TVS03P2M	Thyristor
Q851	2SC1383-R.S	Comparator Amp
Q852	TVS2SC2199	Converter Out
Q853	2SD636-R.S.T	Comparator Amp
Q854	2SD636-R.S.T	Comparator Amp
	I.C.	
IC001	TVSUPC574J	Regulator
IC101	AN5130	VIF.AGC.Det.AFT
IC201	AN240P	SIF Audio
IC401	AN5436	H/V Osc. V Drive
IC601	TVSCN5311	Chroma
IC651	AN5320	ColorPilot
IC801	TVSSTR371	Regulator
IC851	TVSUPC339C	Comparator
	FILTERS	
X101	EFCH45MVZ2	Filter
X201	EFCS4R5MS3	Filter
X651	TSS816M	Crystal
	SWITCHES	
S050	TSE1470	Band Select SW
S151	TSE357	AFT Switch
S221	ESD3228	Monitor/TV Switch
S301	EVQR3AL13	Service Switch
S651	TSE358	ColorPilot Switch
S801	ESB99542T	Power Switch
	OTHERS	
	200RB22	Picture Tube
	EAS8P510SA	Speaker
	EXNG131P02D	C-R Combination
	EXPP820K333S	C-R Combination
	EXRP181K682S	C-R Combination
	RDR21-1	Roller
	RDS4060A	Coil Spring
	RDY31A	Roller Shaft
	RDZ05A	Indicator Rope
	TBL63108	Stand

Ref. No.	Part No.	Description
	TBM27010	Model Name Plate
	TBM37177	Service Plate
	TBX1556701	Top Cont Knobs
	TBX1556800	Sound Cont Knob
	TBX1586300	Power SW Button
	TBX1586400	Band Selec Button
	TBX1790300	ColorPilot Knob
	TBX678600	Tuning Knob
	TEK80434	Tuning Shaft
	TEK80440	Pulley
	THE399-2	CRT Mount Screw
	THN974-8	Speed Nut
	THT972	Screw
	TJB525100	75ohm/300ohm Unit
	TJB725400	Antenna Terminal
	TJC6319	Fuse Holder (L)
	TJC6320	Fuse Holder (S)
	TJS27970	Earphone Socket
	TJS29780-1FS	Power Socket
	TJS35090	CRT Socket
	TKG69609	Front Cover
	TKK159359	Channel Indicator
	TKK60241	Handle
	TKP1653382	Aluminum Panel
	TKU183201	Back Cabinet
	TKX64606	Top Cabinet
	TKX64706-1	Side Cabinet(R)
	TKX64806	Side Cabinet(L)
	TKX64901-1	Bottom Cabinet
	TKZ69968	SP Mount Metal(R)
	TKZ69968-1	SP Mount Metal(L)
	TLC2036	Convergence Yoke
	TMK14932	Rubber Sheet
	TMK15568	C Board Barrier
	TMK27236	Heat Sink Barrier
	TMM15207	CRT Socket Cap
	TMM15547	CRT Spacer
	TMM16489	Nylatch
	TMM17538	DY Wedge
	TMW6309-1	Tuning Bracket
	TMW6310-1	Mounting Bracket
	TMX17403	U Board Fixing
	TNP16933ZB	Circuit Board C
	TNP16934ZA	Circuit Board N2
	TNP42138ZA	Circuit Board L

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
	TNP42139ZA	Circuit Board S			
	TNP55080ZA	Circuit Board G			
	TNP62276ZA	Circuit Board N1			
	TNP62437ZB	Circuit Board U			
	TNP62580ZA	Circuit Board B			
	TNP65858ZA	Circuit Board A			
	TNP66007AA	Circuit Board V			
	TNP66229ZA	Circuit Board E			
	TNV56777F2	VHF/UHF Tuner			
	TPC192314	Packing Case			
	TPD155012	Cushion(R)			
	TPD155013	Cushion(L)			
	TPE24004	Set Cover			
	TQB611786	Fan Bag			
	TSA338-1	UHF Antenna			
	TSA8108-11Y	VHF Antenna			
	TSX1174	Power Supply Cord			
	TSX1302-2	Car Cord			
	TXFKE017711A	Escutcheon			
	XANT125	Neon Lamp			
	XANT322	Neon Lamp			
	XBA1C05NU100	Fuse 125V 0.5A			
	XBA1F30NU14A	Fuse 125V 3A			
	XBA1F50NU14A	Fuse 125V 5A			
	XEH3B1-A1	Earphone			
	XTC4+15BFC	Screw			
	XYN4+C8	Mounting Screw			

Printed in Japar
83045000 Ⓗ